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THE INFLUENCE OF FOREIGN DESIGN ON ENGLISH ARCHITECTURE

TO speak of English architecture as distinct from that of any other nation is to imply a definite traditional development from some bygone time which is peculiar to the people of this country.

Whatever direction this development may have taken, and however widely divergent from its original sources, the result has been to impart such a character to our work that up to recent times it has always remained in some sense national and expressive of our collective consciousness.

That such a development has been influenced and directed by our relations with other countries must be obvious to all with a most elementary knowledge of our history.

As our civilisation has increased and our means of communication made easier, so we have enlarged the boundaries of our vision, and to some extent been imitative of what is distinctive in our neighbours.

To escape such influence is as undesirable as it is impossible; and even in the earliest periods we doubt if we have been altogether free from it.

During the Middle Ages, when, owing to the prevailing conditions, communities were more separated and effort was more local and circumscribed, such influences are plainly discernible. The changes that took place in our Gothic buildings can be compared step by step with corresponding changes on the Continent.

It is, however, when we come to the sixteenth century that we can plainly perceive a more marked increase of foreign influence on our architecture.

The importation of Italian workmen, together with a revived interest in the classics, lead to a desire to emulate the works of the ancients, as seen through the eyes of Italy, the complete expression of which was not attained until the advent of Inigo Jones.

Up to this date such knowledge as we had of the arts of other countries was partial and fragmentary, but from then onwards the practice of making foreign tours for the purpose of study became an increasingly important factor in the education of the architect.

If Jones was indebted to Italy for inspiration and guidance in the selection of his models, Wren and his contemporaries owed not a little to France, though the Italian tradition, which is generally described as Palladian, persisted here until the close of the eighteenth century.

We see this very clearly exemplified in the works of Chambers, which undoubtedly were much influenced by contemporary French work, though the prevailing feeling is that severe and dignified restraint which we are in the habit of associating with the buildings of the Italian master and his disciples.

So many various causes—social, religious, and political—have to be taken into account in dealing with any change in man's habits or estate that it is very difficult to say with any degree of certainty what is the determining factor in any recognisable change. For the sake of convenience we have divided our "Architectural Histories" into so many periods and "styles" that we are apt to lose sight of the fact that these divisions are purely arbitrary, and it is not until we forget these artificial barriers that we can properly appreciate what the true history of architecture is.

No change of a so-called "style" was ever brought about by the rite of a sudden conversion without other and contributary causes; no architect ever went to bed a rigid devotee of the classics and awoke the next morning to find to his intense astonishment that he was a confirmed believer in the Gothic Revival! All change is gradual and expressive of underlying realities which are of the very essence of life itself.

Possibly because of its nearness in point of time, and our close relation to it, the study of the nineteenth century remains for us the most difficult and bewildering of all periods; and this is particularly true of our own architectural movements during that time.

That astounding revolution of the Gothic School has no exact parallel in any other country, and without a minute and exhaustive examination of all the forces that led up to and were responsible for it it is impossible to arrive at even the vaguest and most uncertain conclusions.

The sudden commercial expansion, with the corresponding rise to wealth and affluence of large masses of the democracy, added to our increasing interest in science, which was at first treated as the mere servant of wealth, brought about a feeling of self-consciousness and self-importance that was quickly represented in our architecture.

Up to this time we accepted all changes as natural and expressive of that expansion of ideas which a fuller knowledge and a more complete realisation of our opportunities led us to, without too close an inspection or inquiry into the actual motives or reasons for the same. We became more introspective, and that searching analysis of self, which is the beginning if not the end of all intellectual effort, to the undue expounding of which half the novels in our circulating libraries are now devoted, became a recognisable quantity in the sum total of our national character.

One of the first results of this new attitude was a total rejection of all foreign influence; we returned for inspiration to our own earlier efforts and, as it were, lived on our former selves. This withdrawal from the world had two direct results—it led to a falsity of conception and to a pretentious affectation the worst effects of which we have not yet recovered from. The Gothic Revival bloomed and faded away for want of proper sustenance; it was an artificial growth, watered by the tears of sentiment and tended by the hands of romanticism, and after the passing of which came chaos. The old standards of taste had been discarded, the tried and trusted captains discredited; what had been a compact and organised army became a disorderly rabble, following any and every chance leader who offered himself.

All restraint was thrown aside; we were bound neither by the example of Goth or Classic; we plundered at will, and the restrained expression of personal likes and dislikes developed into sheer capriciousness and licence.

If before we had sought too rigid an exclusion (during the time of the Gothic Revival), we now went to the other extreme. All countries and all periods were ransacked for our delectation; revival followed revival in almost indecent haste; we passed from one "style" to another without thought or consideration; we blundered along an unknown path without principles or knowledge to guide us.

If the Early Victorian was dull and the Mid-Victorian pretentious, the late Victorian was vicious and degraded. A

false art wedded to a false science was productive of an offspring so degenerate as to be completely demoralised.

Until now our performances had some appearance of solidarity; they had the authority of a general consensus of opinion which decided our movements and controlled our energies; we were not so divided in our counsels, and such groups as there were fell within well-defined limitations, with known rules and regulations.

The succeeding years witnessed a wide divergence from this happy state, instead of a logical evolution, the result of influences which were universally felt; we surrendered to the undue elevation of the individual.

We hardly know whether to describe this change in thought as due to foreign influence so much as to an altogether too ready an acceptation and slavish copying of foreign methods and modes which in part were alien and inimical to us.

A very clear distinction must be drawn between an influence that is deliberately sought and one that comes naturally and, as it were, in spite of ourselves.

Our streets bear eloquent witness to our passing fancies, and in one and the same thoroughfare we may to-day behold buildings which are based respectively on Dutch, French, Spanish, Italian, and English models. The study of the "styles," slipshod and careless as it too often is, has been pursued in ignorance of what the real meaning of the word "style" is.

The special imprint and characterisation which various nationalities have impressed on their work at different periods, and which for want of a better word we describe as "style," but which might be more truly stated to be the manifestation of the soul or spirit of a people at some particular time, has been dissected and catalogued for hasty adaptation and unintelligent use.

It is interesting to consider the change that has taken place in our architecture during the last ten or fifteen years; what for want of a better definition may be described as competition architecture has during that time had its day and is past.

It was a curious mixture of Palladianism, very badly interpreted, with a flavouring of French or Italian Renaissance, with perhaps a quaint Dutch gable or two thrown in to give an added interest.

We do not think it would be unfair to describe a typical town hall of, say, 1900 or thereabout as Palladian in conception, with rows of smooth flat columns having French Ionic caps with tearful drops, a few Georgian cartouches stuck about the elevations, with glazed lead windows of the Wren type, and possibly a high Dutch roof with dormers in it—a pleasing and convincing picture! The last great French Exhibition held in Paris had a great and immediate influence on French architecture, and in a lesser degree on English. The Grand Palais in particular was universally admired and copied. It will be remembered that the original structure was intended to be carried out in plaster, and that it was afterwards reproduced in stone—a transition that was not altogether without some unhappy results.

As seen in the original design the freedom of modelling in the ornament and the general treatment of the façades, with the disposition of the masses and the handling of the detail, was very expressive of the use and limitations of the material employed. In the actual building the appreciation of what was necessitated by the change of material was not sufficiently realised. Large swags, which in plaster would not look so out of scale, had an overloaded and heavy appearance when translated into stone; the treatment of rounded surfaces and richly ornamented parts with a feeling of plasticity over all is not suitable when applied to hard surfaces and to an edifice which is built up by a series of separate blocks.

Their temporary exhibition buildings taught the French the use of the *tour de force*, and it is surprising to think to what an extent a highly critical and imaginative nation, such as the French are, have been led away by the evanescent charm of plaster!

It was not long before we on this side of the Channel felt the result of all this. Little by little the same outstanding features were reproduced in our own buildings; the enormous cartouche made its appearance; the heavy swag and clayey sculpture were quick to follow. A good deal of talk was heard for the necessity of modelling in the design of our buildings; the aim with many, judging from their paper designs, seemed to be an effect as if their buildings had been made in a mould poured in from the top.

The unsuitability of the methods employed was emphasised by the stubborn resistance of the more enduring materials to this form of treatment.

But this interest in modern French design has not been without its beneficial results. The study of the Grand Palais and the other exhibition buildings lead us to a closer examination of the principles of French design and craftsmanship.

It became increasingly apparent that our own dilettante methods of appropriation did not give that totality of effect which a more thorough study would bring about; our understanding of this was helped by the work of certain distinguished French architects who have done us the honour to build on British soil.

The recently-formed Committee of the École des Beaux-Arts, with their scheme of ateliers, may be cited as an instance of our intentions in this respect. We have seen that our happy-go-lucky rule-of-thumb methods are unsuitable to the highest expression of our requirements, and if such schools can give us an insight into the secrets of French efficiency and French thoroughness they will be doing an invaluable work. If, at the same time, they can teach us the principles of composition and planning, the disposition of masses, and the general way in which to approach a particular problem, allowing opportunity for the study of our own English tradition and the expression of English sentiments, they will be in a fair way to founding that great School of Architecture for the want of which we are so sadly handicapped.

English architecture of to-day may be divided roughly into three groups—that which is more or less concerned with the reproduction of our past; secondly, that which is chiefly influenced by modern French methods of design and expression; and, thirdly, that which seeks to base itself on the classic models of Greece and Rome and to use and adopt such models to modern conditions. The last group may be said to be largely influenced by recent work in America, but whether this can be altogether described as a foreign influence is open to question; possibly it would be better to call it an outside or external influence.

This is only a very general approximation, as the three groups are so intermixed that it is impossible to draw any very hard-and-fast lines; they represent general diverging tendencies rather than acute differences.

Again, modern American work owes so much to Paris that it may be said to be French influence exerted through other channels; but this is only partially true, for America has achieved certain definite results and has produced buildings which are as truly American as is their constitution or their entity as a nation. The work of such a firm as McKim, Mead, & White is indicative of what can be attained by the steady pursuit of a high ideal. The work of this firm may be said to be a school in itself, and the study of their buildings has had an enormous influence not only on the work of their fellow-countrymen, but on the work of Canadians and ourselves.

Of the French and American schools it might be said that the former stands for orderliness of composition and the latter for the application of old *motifs* to new problems, together with a more severe and conscientious rendering of classic details.

From both these schools we have learnt much, and can learn still more. The French can teach us the Grand Manner of design, the bold conception in plan and scheme; they can help us to form an idea of the City Beautiful, to disregard trivialities, and to aim at a totality of effect; whilst from the American we can learn the value of studying the works of the past and of applying the results of our lessons to modern conditions. From them we shall learn to acquire a love of beautiful detail and the importance of the careful consideration of all the component parts that go to make the completed design. It is impossible to forecast the future, but if we are ever to have the great School of Architecture, foreshadowed by Mr. Blomfield in his recent remarks at the R.I.B.A., it appears to us that it will have to be formed on some such lines as we have indicated.

Whilst not forgetting the importance of our own fine tradition, and the necessity for a thorough knowledge and study of the same, we must be careful not to shut ourselves off from those beneficial influences which, whether they come from the Continent or America, if properly assimilated and accepted in the right way, must help to lift us up out of our present state of indecision and help to place our architecture on a broader and more permanent basis.

Character is everything, and compared to which "style" is of little or no importance. The faults of our immediate past can teach us what to avoid as well as what to improve. If we are sincere and earnest in our endeavour, there need be no misgiving as to the future; a fine and splendid architecture will arise, serene, beautiful, and triumphant, worthy of a great and Imperial people.

NOTES.

The Funeral of Lord Wolseley and the Precincts of St. Paul's.

THE burial of Lord Wolseley, with full military honours, in St. Paul's Cathedral draws attention once more to the inadequacy of its precincts and surroundings for the proper conduct of such a solemn and dignified ceremony. To those of the general public who desire to pay the last tribute of respect to a national hero the reception of his remains at the great west door of St. Paul's is the final climax to which the whole funeral procession leads up, symbolising as it does to them the actual committal service within. The whole dignity of the military procession, therefore, should be here gathered up in such a grouping and arrangement as will enhance the dignity of such a solemn climax and fitly express the feelings of the nation. To this end the Cathedral precincts should be arranged and so enclosed as to provide a worthy architectural setting, making due allowance also for the convenience of those who wish to gather here to take part in the final act of public homage to our illustrious dead.

Municipal Exhibitions of Local Art.

THE trustees and members of the Sheffield Society of Artists are petitioning the City Council, urging them to consider the advisability of holding an exhibition annually of contemporary works of art, including pictures, sculpture, handicrafts, and black-and-white work. From statistics which have been obtained from other towns it appears that in twenty-three towns annual exhibitions are strongly advocated, and in twenty-two of them such exhibitions are held under the auspices of the municipal authorities, and are considered entirely satisfactory from an educational standpoint, if not financially. From the information collected it is considered that Sheffield, as the fifth largest city in England, should hold such an exhibition, but that as the trust deeds of the Mappin Art Gallery preclude the exhibition of works for sale it is evident that the best contemporary work cannot be exhibited there, though it may be sent to other places where no such restrictions exist. The City Council are, therefore, to be petitioned to the effect that such an annual exhibition should be held in rooms rented for the purpose under the direction of a committee composed of members of the Council and the Sheffield Society of Artists and others. The annual expenditure is estimated at £300 to £350, but it is pointed out that it would be of the greatest benefit in encouraging local art and raising its standard, and would also stimulate the trade of the city. We hope that success will attend the movement, the object of which is certainly commendable as long as the exhibits owe their position to their being "objects of art," and not only to their being "local." There is in many such cases a tendency to lower standards, which is regrettable. We remember a Welsh town in this context whose exhibited works of art would not by themselves create enthusiasm for the "divine mission of art" which they were intended to exemplify.

Hampstead Heath.

MR. WILLIAM WOODWARD, in a letter to the *Times* of the 29th ult., calls attention to a clause in the London County Council (General Powers) Bill for Session 1913, Clause 21, in which powers are to be obtained enabling the Council to appropriate, and use for educational purposes, part of the open space of Parliament Hill-fields, receiving by way of exchange a certain other area now vested in the Council. Mr. Woodward pertinently points out that the area to be obtained is less than the area to be given up by some 6,000 ft., a fact to which no allusion is made in the Bill. Considering the great struggle which was necessary to secure the open space for Hampstead, we entirely agree with Mr. Woodward in thinking that the action of the London County Council would create a precedent which might have unfortunate future results, and that the proposal should be resisted.

The Late Mr. J. Pierpont Morgan.

THE death of Mr. Pierpont Morgan removes one of the dominating and outstanding personalities of our times. To the general public his name stood for the accumulation of wealth so vast as to be beyond the power of the ordinary man to grasp the meaning of it, or else for a controlling force in the financial world not altogether advantageous, perhaps, to the best interests of the community. But to the architect the personal qualities that made his achievements possible are of more interest than the achievements themselves, for vital energy, combined with an imaginative outlook and a capacity for organisation, are the qualities equally necessary to success in architecture. The power to reduce chaos to order by arrangement, co-ordination, and simplification is of the essence of the architect's work; and, in so far as the activities of such financiers as Mr. Morgan are directed to the better organisation and simplification of commercial life, they may be said to approximate to those of the architect, and to call for the possession of somewhat similar faculties. Born in a country where the best brains are still needed for the development of its natural resources and the organisation of its amazing industrial expansion, his career appears to have been marked out for him by fate. But that he had other and, from our point of view, higher interests is evidenced by his well-known penchant for the collection of works of art. Although the wholesale manner in which his operations were conducted suggests the absence of the true collector's passion, he no doubt took a genuine pleasure in his acquisitions; but we cannot but feel that such limitless resources would have been better employed in the encouragement of contemporary art.

SPECIALISATION IN ARCHITECTURE AND IN ARCHITECTURAL EDUCATION.

DURING the Renaissance period in Italy it was possible for one man to practise several arts, including architecture. Thus the architect of those days was also a sculptor, a painter, and, in some instances—Vasari being a case in point—a man of letters. Since those days architecture has become a vastly more complicated matter; far more types of buildings have to be erected, and in designing them complicated by-laws and other regulations have to be considered. Sanitary science has advanced by leaps and bounds, and the modern architect can no longer neglect its claims. New materials have been introduced, and our new methods of construction, some of them of a very scientific nature, necessitating for their proper use considerable knowledge of mathematics and physics, have added considerably to the burden of the architect.

So, nowadays, not only is it no longer possible for the architect to practise other arts than his own, but it also seems increasingly difficult for him to be a complete architect. In other words, the work of designing and superintending the erection of buildings must be divided into classes, some architects doing one kind of work and others doing another kind. The question then arises as to the best method of dividing up architectural work into classes. And in this connection I wish it to be clearly understood that I am writing of master architects—men who are responsible for designing and superintending the erection of buildings—not of their assistants.

One familiar method of classification presents itself at once to the mind—"Artistic" architects and "practical" architects. This classification depends for its existence principally on the misuse of the word "artistic" as connoting something opposed to the practical. The so-called "artistic" architect seems to have spent his time in preparing drawings of pleasing appearance, and in getting into all kinds of trouble because of his lack of knowledge of materials, construction, and sanitation, and because he unconsciously treated architecture as a two-dimensioned rather than as a three-dimensioned art.

But this classification of architects is passing, if indeed it has not already gone, for now we see clearly that the art of architecture is essentially a practical matter, and that it ceases to live when the reasonable claims of utility are sacrificed in the attempt to get a sham beauty. "Surely the chief beauty of a building is that which arises out of its perfect adaptation to the uses for which it is designed," as the Rev. J. B. Lock so well expressed it in his paper on the "Planning of Collegiate Buildings," which he read before the Royal Institute of British Architects some years ago.*

Another method of specialising was common in the last century, for then we had Gothicists and Classicists, but that division, too, has gone, never to return, one devoutly hopes. Now-a-days we study the architecture of the past not with the idea of reproducing its forms, but rather with the object of learning its lesson of the grasping and overcoming of difficulties; and, realising that what was beautiful in one set of circumstances is not necessarily so in another, we strive to grasp and overcome our own difficulties and to give beauty to our solutions of modern problems.

What method of specialising is, then, left to us? Surely it is that of types of buildings, one man specialising in one type or series of types and another in another series. This is a method which has been developing during the last fifty years, and which can now be considered as firmly established.

We have, for example, architects who specialise in hospitals and similar buildings, others who take theatres and other places of amusement as their particular sphere of work, and others, again, whose principal work is the designing of educational establishments. We have also specialists in ecclesiastical, domestic, and public buildings. It will be noted that this type of specialisation hardly admits, if indeed it admits at all, of another type of specialisation at the same time. It certainly does not admit of any classification of architects as "artistic" and "practical."

It will doubtless be argued that the designer of a hospital needs principally a knowledge of sanitation and hospital conditions, but to make a hospital a work of architecture—and it is architecture we are discussing—its designer must be no less "artistic" than the designer of a town hall. And conversely in order that an architect can really design and superintend the erection of, say, a town hall, his knowledge of construction and sanitation (using this word in its proper sense) must be no less sound than that of the designer of a hospital.

Assuming that this conclusion is a sound one, it must surely be taken into consideration in arranging any scheme of architectural education in which the principle of specialisation is admitted. Personally I am not convinced that there is serious need for specialisation in architectural education up to the level of, say, the Institute Final Examinations, but, as the Institute examinations have recently become specialised to a marked degree, it may be worth while to consider whether the method adopted is the best. In the Intermediate Examination, for instance, there are compulsory papers on the General History of Architecture, Simple Applied Construction, and Theoretical Construction. The student must then decide whether he will specialise in Historical Architecture, in

* See our issue for May 21, 1904.

Mathematics and Mechanics, or in Design. And, further, if he decides to specialise in Historical Architecture, he must decide whether he will take Greek and Roman, Byzantine and Romanesque, French and English Gothic, or Italian, French, and English Renaissance. Again, in preparing the Testimonies of Study for the Intermediate he must decide whether he will draw details of Classic or of Mediæval ornament. In the Final, students have to submit a thesis, which must be on Historical Architecture, Science as Applied to Building, or Design including Decoration.

I think it is well worth the while of all interested in architectural education to consider this scheme of specialisation, first as to whether specialisation is necessary at all in the Institute examinations; and, secondly, assuming it is necessary, whether this is the method which fits in best with the requirements of architects, the one which is most likely to influence the art for good.

What will be the effect of this method of specialisation? Surely it will be to confirm the old and erroneous distinction between "artistic" and "practical" architects, for some students will take Historical Architecture as their special subject in the Intermediate and for the Final thesis, others will take Mathematics and Mechanics in the Intermediate, and submit a thesis on the Application of Science to Building; while others, again, will take Design in the Intermediate, and submit a study in design as their thesis for the Final. In this way three kinds of architects are to be turned out, some strong in the knowledge of Historical Architecture, others specially trained in Science, and others, again, while presumably less well equipped with a knowledge of past architecture and of the application of science to building problems, still in some curious way more highly skilled in "Design." And of those who select Historical Architecture for special study, some are to be specialists in Greek and Roman Architecture, others in French and English Gothic, and so on.

But, unfortunately, the opportunity for specialisation in these examinations does not end even here, for the subjects which are set for the Testimonies of Study for the Final are divided into two sets—one in which construction is to be shown (the drawings having to be finished as working drawings), and in the other set the drawings are to have the shadows projected at an angle of 45 deg. in line, monochrome, or colour, and on these drawings, to judge from published examples of approved testimonies, construction need not be indicated. Obviously, we do not need two types of architect, one able to prepare working drawings and another able to project shadows, so surely the object of the Institute in arranging these two kinds of design problems must have been that of providing for two types of student—those who hope to become practising architects, and as such will need to prepare working drawings, and those who, being less ambitious, only seek to occupy more humble positions as draughtsmen.

To return for a moment to the consideration of the other part of the examination, the types of men which it will turn out do not fit in with any system of specialisation which obtains, or ought to obtain, among architects. While it is true that here and there an architect has, fortunately for the art of architecture, become a specialist in the History of Architecture, or in the application of science to building problems, surely we do not want the future members of the profession to be divided into three classes as Historians, Scientists, and "Designers." If then we *must* specialise in the Institute examinations, let it be in types of building. Let candidates select one of, say, six series of types, and from the series they select let them be examined in Design in the Final.

Such a form of specialisation in this examination would have distinct advantages, if any form must be adopted. It would lead in all probability to the candidates studying in a fairly thorough manner the designing of a certain class of buildings. It would enable them to discover the difficulties of the special type of work dealt with and the best methods of overcoming them. At present the candidates have to be prepared to design any class of building, and are told a week or so in advance what type of problem will be set in the design examination. This leads to the examination in design being comparatively easy for the student who happens to have had experience of the type selected, and comparatively difficult for the other candidates, who cannot in the short time available really make themselves familiar with the special difficulties which have to be grappled with in the particular type of building in question.

This division into series could be arranged on broad lines. For instance, one series might include houses of all sizes, flats, hotels, clubs, shops, and, say, the problems involved in the laying-out of a garden suburb. Another series might include all types of educational establishments from the village school to the training college and the University College, and perhaps also including such buildings as public libraries. A third series would consist of hospitals and similar institutions, ranging from the cottage hospital upward. Ecclesiastical buildings might form another series, and of these there are ample varieties. A fifth series might contain places of amusement, and the sixth municipal buildings and the like.

If such a scheme were adopted the standard of design required in the examination could be considerably raised, and to reach this standard the candidates would still have quite plenty of work to do in the years of preparation for the Final. They would be able to read and to digest to some extent the leading books on their particular type of buildings; they would be able to visit such buildings and to learn something of the life and work which goes on inside them. It is possible that by some such method as this more thorough architects might be produced, not specialists in Historical Architecture, in the application of science to buildings, or in a particular form of draughtsmanship, but specialists capable of designing (in the fullest sense of the word), and of superintending the erection of certain classes of building.

In conclusion, let it be remembered that if architecture is once more to take its proper place among the arts it will be increasingly necessary for architects, as a class, to turn out buildings which are beautiful in the sense which includes complete efficiency. For great architecture, the largest buildings must be no less efficient than the smallest, and the man who aspires to design them and to superintend their erection must have at least as sound a knowledge of practical matters as the man who designs cottages. The architecture of the future will surely not be one in which construction, sanitation, and suitability to purpose will be sacrificed on behalf of a fictitious beauty obtained by arranging façades according to some preconceived scheme of detail and proportion.

W. S. PURCHON.

GREEK REFINEMENTS.*

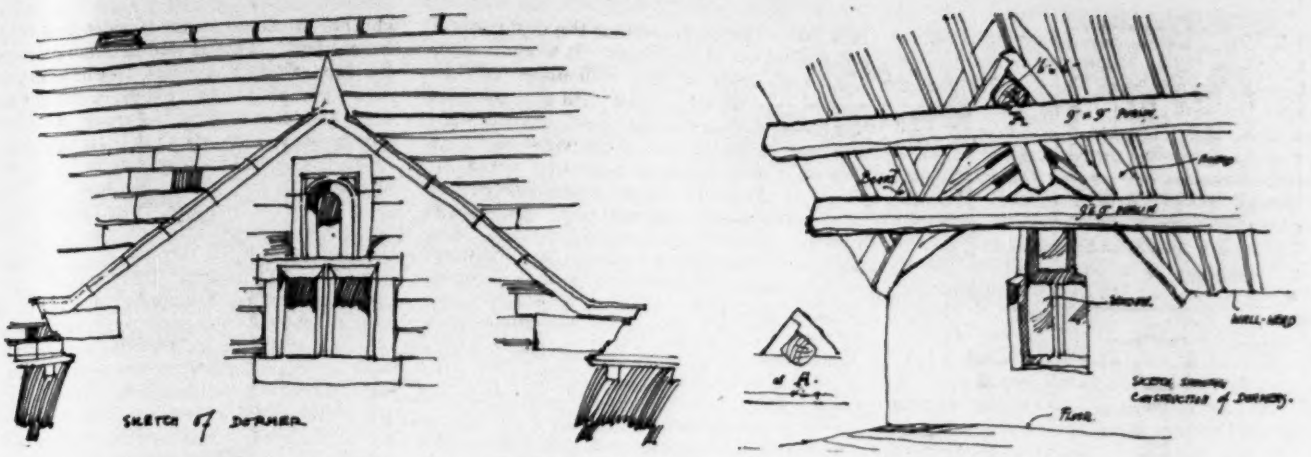
PROFESSOR GOODYEAR has rendered good service in the compilation and publication of this work, which combines in one compendious volume, illustrated by a fine series of photographs, the various theories put forward in explanation of the origin and meaning of the Greek refinements. Hitherto these could only be obtained by the consultation of numerous volumes, some of them of large bulk and others not always to be found in our libraries. The work is one which must have called for long and continuous research, and, in the case of the opinions of German professors, the greater portion of it will be quite new to our readers, though we are not quite sure whether in some cases it does not confuse the subject. This is due in some respects to the fact that when one German professor puts forward a new theory, a second takes it up and proves it to be wrong, and a third arrives who contends that both are in error. There is one satisfactory conclusion at which we arrive, viz., that Penrose is quoted continually throughout the work, though not always in favour of his views. The whole subject as treated by Professor Goodyear is further complicated by the consideration of horizontal curves in plan, notably those of the great court of the Temple of Medinet-Habû in Thebes, discovered by Pennethorne in 1838, but of which no notice would appear to have been taken till the publication of his work in 1878.* Professor Goodyear states that certain optical theories which had been advanced to explain the Greek Temple curves between 1838 and 1878—notably those of Penrose and of the distinguished experts, Thiersch and Hauck—have been based on inadequate knowledge of the subject. We are quite certain, however, that Penrose was acquainted with them, and if they were not taken into his consideration it was probably because he did not think they had anything to do with his interpretation of the subject. Moreover, at the time the great refinements were being introduced into the Parthenon, the Greeks had never penetrated further south than Naucratis, some 700 miles north of Thebes, and Herodotus, the principal Greek authority of Egyptian architecture, makes no reference to them.

The value of Professor Goodyear's book, however, is further enhanced by the description of the introduction of the curves on plan found in Roman architecture, especially as they constitute a subject upon which he has already published several descriptions in American architectural journals, but little known here. We refer more especially to the illustrations and descriptions of the Maison Carrée at Nemes, Figs. 27 and 28, and the Temple at Cori, Figs. 29 to 37. In Fig. 27 of the former the deflection of the east cornice outwards, which measures 5 in. in a length of 82 ft., is clearly shown; and in the Temple at Cori (Figs. 29 to 37), on the contrary, the curvature of the cornice is concave, so that when seen in front the cornice seems to sag in the centre. A similar concave curve has been noticed in the Temple of Segesta in Sicily, Figs. 62 and 63, and in the Temple of Poseidon at Pæstum there is a converse curvature, so that it does not seem possible in either Greek or Roman examples to lay down a definite rule. On this subject Professor Goodyear gives an extract from Emile Boutmy,† a distinguished French writer, which is worth quoting here. Speaking of the Parthenon, the forms of which are apparently geometrical and regular, he goes on: "If we approach nearer and look with greater care we shall find that in all these innumerable straight lines there is not a single one which is really straight. While the general summary impression is one of rigid geometry, the deeper and more intimate impression which unites with this, and which comes to the senses as though bound up with it, is that of elasticity and of flexible grace. Felt without being perceptible, unknown to the brain while our eyes enjoy the effect, this arrangement arouses no feeling of dissatisfaction and is sufficient to change the rigidity of rectilineal forms into a forcible expression of living supple firmness."

As regards the "scamilli impares" of Vitruvius, Book III., Chapter IV., Professor Goodyear gives a complete account of the theory of Emile Burnouf, to which we must refer our readers, and, as the translation published by Choisy gives, probably, the true interpretation of the passage, it is not worth while entering into the question. Penrose and all the chief authorities, including Choisy, arrived at

* "Greek Refinements." By William Henry Goodyear. (Oxford University Press, 1912.)

* "Geometry and Optics of the Ancients." By John Pennethorne. 1878.
† Le Parthenon et le Genie Grec. 1897.



An Old Yorkshire Farmhouse.

the conclusion that the "scamilli impares" were the additions left under the lower drum of the columns; it is necessary that it should rest on the curved stylobate and allow of the inward inclination of the columns. Burnouf applied it to the formation of the stylobate curve; Vitruvius, who seemed to be hazy on the subject, attempted in a single sentence of thirty-eight words to describe that which would require at least two pages, and several volumes have, in consequence, been written on the subject.

The sixth chapter of Professor Goodyear's book is devoted to asymmetric dimensions in Greek Temples, in which he points out the variations which are found chiefly in the temples of South Italy and Sicily. Most of the statements are based on the important work of Koldeway and Puchstein,* who were firm believers in formal regularity being the desirable ideal of classic architecture. How far it was departed from in the actual examples described by them can only be followed by reading Professor Goodyear's book. The frequent allusions in this chapter to the irregularities found in mediæval work, on which Professor Goodyear has written so much, inclines one to believe that this volume is a prelude to a second volume dealing with the same; and if instead of "refinements" he had been content to term them "irregularities in setting-out and construction," or, better still, "asymmetric dimensions in mediæval work," his statements might have met with a more general reception than they have hitherto. In any case, Professor Goodyear's volume is of very great interest, and the superb illustrations should make it a most valuable addition to architectural studies. At the conclusion an index of authorities is given which will enable students to consult the references given and to follow up the inquiry.

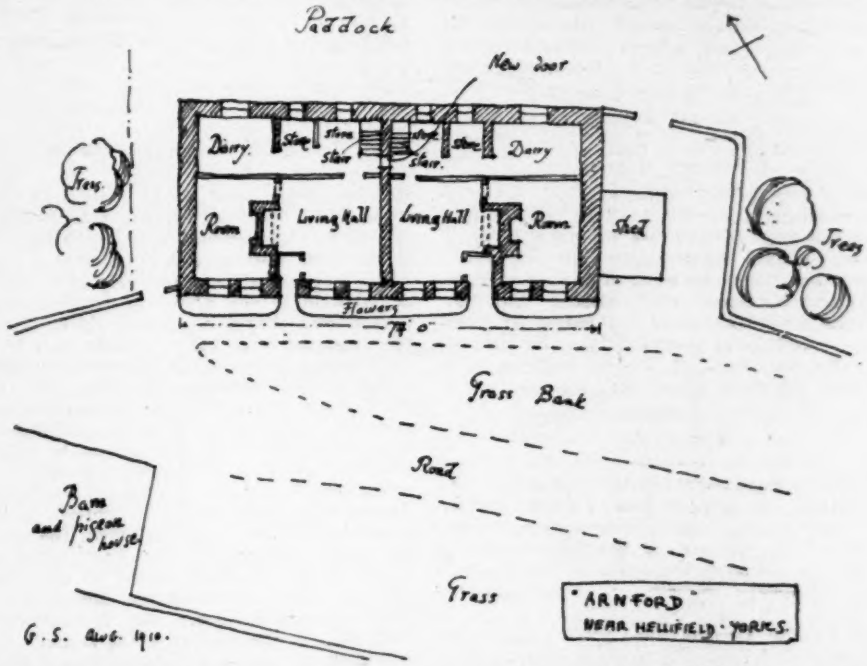
R. PHENÉ SPIERS.

* Die Griechischen Tempel in Unti italien und Sicilian. 1899.

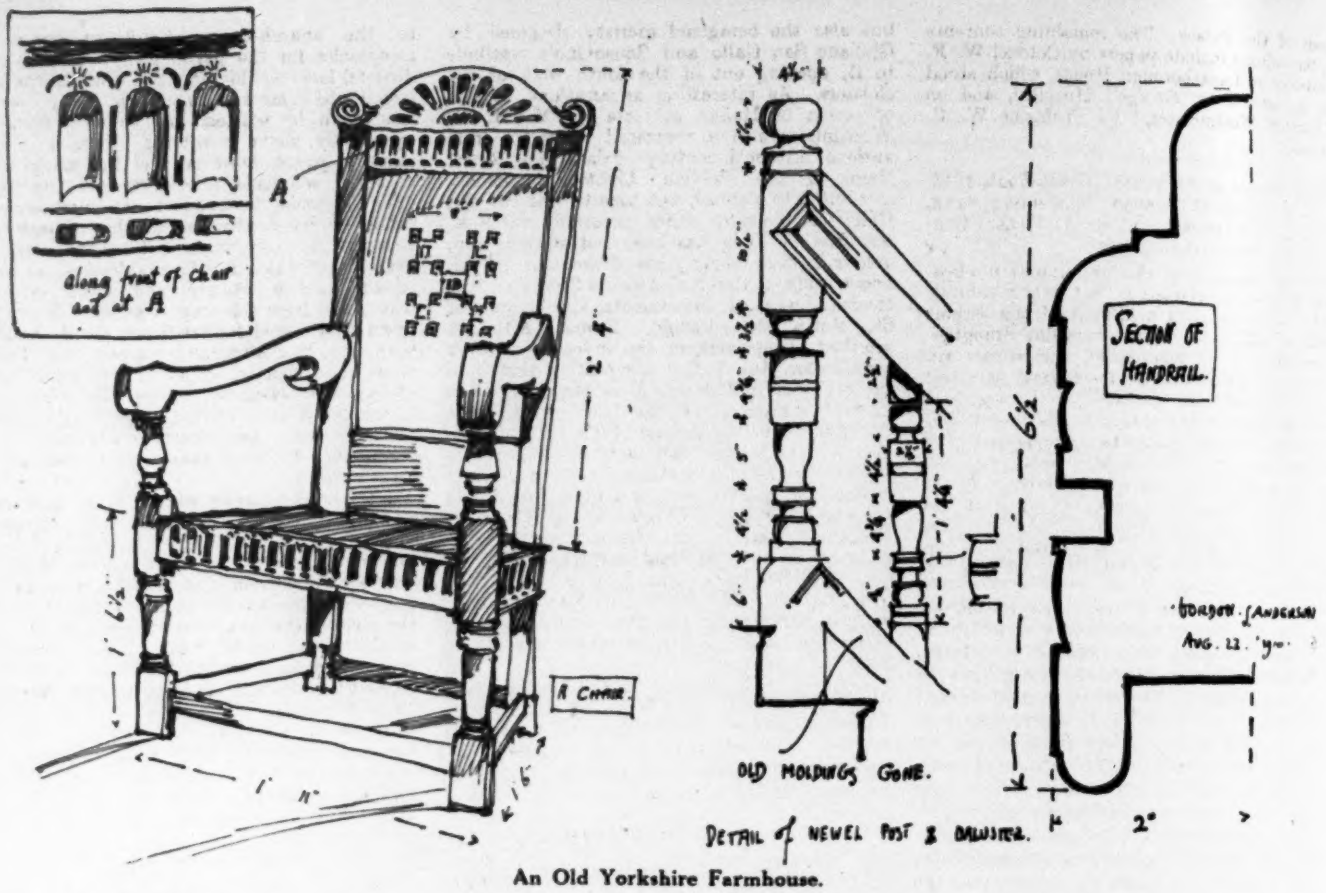
AN OLD YORKSHIRE FARMHOUSE.

THE West Riding district possesses many old halls and large farmhouses which are full of interest to the architect. They generally lie somewhat off the beaten track, and an intimate knowledge of the country-side is a great help in locating them. The majority of them date from the middle of the seventeenth century, and their date is generally suitably inscribed over the door or forms a separate ornamental feature on a "date stone" on some conspicuous part of the house.

"Arnford House," the subject of this short article, is about a mile from Hellifield (Midland and Lancashire and Yorkshire railways). The present farmhouse was originally two houses, each of the same plan. The sketch-plan shows the arrangement of the rooms on the ground floor. Each house had three bedrooms on the first floor and three rooms on the attic floor, where the servants would probably sleep. The oak staircases are very fine, and oak floors are supported on large oak beams, while the same wood is freely used in the construction of the roof, which is covered with heavy stone slates. The door-head is of quaint and pleasing design, though it is difficult to say what the rough stone at the top of the horseshoe has been intended for. A rough plinth runs along the main front of the house (a general treatment of houses in this district), and the elevation is relieved by two string courses marking first and attic floors. The old fireplace in the living hall has been done away with, and the present tenant, who put in a new slow combustion grate, says that two cart-loads of rubbish were taken out of the hearth, and that there was room for their horse and cart to drive underneath the huge stone arch which forms the mantel. The old fireplace was raised off the floor and the ovens would be on either side. As wood or peat fires were then used, a large fireplace with a correspondingly large flue would be essential, but the daily consumption of ten scuttlefuls of coal led to the change before mentioned in the warming arrangements. The ground floor is paved with large stone flags and slate shelves, and recessed wall cupboards are freely provided. The stone mouldings of doors and windows have nothing much to commend them. They are of simple form and very solid in appearance. Each room is amply lighted by two windows. Sketches of the old door "snecks" and wrought-iron hinges are given, and these little fittings lend an added interest to the place. It must be remembered that the



An Old Yorkshire Farmhouse.



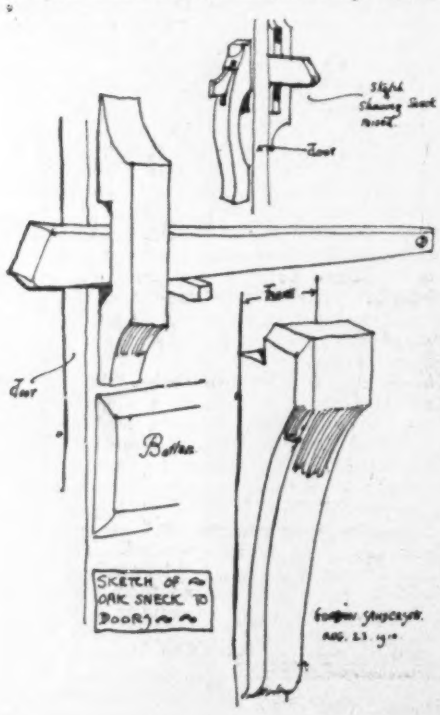
An Old Yorkshire Farmhouse.

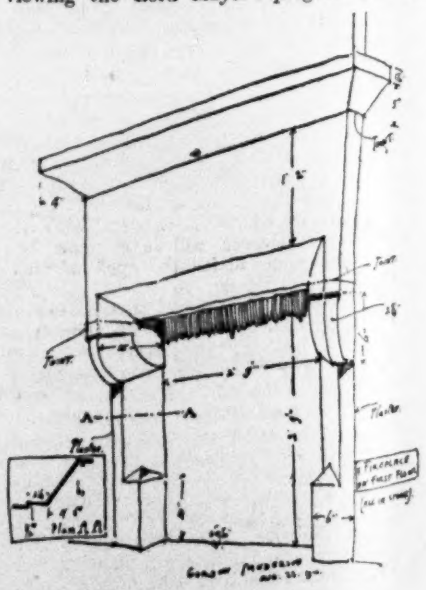
greater part of the work could be done by the yeomen farmers themselves, and to this day the local farmers are no mean builders where simple construction is concerned. These buildings, the work of the old yeomen craftsmen without any artistic training, possess an individuality and charm of their own which is only equalled in the present day by the work of those architects who possess the most refined and cultured taste.

BOOKS.

London Topographical Record, Illustrated, including the Eleventh and Twelfth Annual Reports of the London Topographical Society. Vol. VII. (Printed at the Chiswick Press, and issued from the office of the London Topographical Society, 7, Upper Baker-street, N.W. 1912.)

THE London Topographical Society are to be congratulated upon the latest volume of their record, which contains, among other valuable communications, Lord Eversley's paper on the monuments in Westminster Abbey and an illuminating account of the Society's visit to the site of Whitehall Palace. Lord Eversley, as many of our readers may remember, was at one time instrumental in forming a Committee to consider the advisability of providing an addition to the Abbey in the form of a monumental chapel, a scheme which, though not proceeded with, will eventually have to be reconsidered in view of the present overcrowded state of the building. Starting with the Plantagenet and Lancastrian monuments, the evolution of the Abbey as the national Valhalla is traced down to the present day in regular sequence, and excellent photographs are given of the more remarkable memorials. The author treats with praiseworthy tolerance of the monuments of the allegorical type, the vogue for which came in with the Restoration and lasted well into the early years of the nineteenth century. Many of these are fine works in their own peculiar genre, and will always be interesting to the student of the period. And who shall say that the figure of General Wolfe, lying naked in the arms of a sergeant in full regimentals, did not stir the eighteenth century Englishman to feelings as fine and profound as those inspired in the heart of his mediæval ancestor by the effigy of his king or his kinsman with the last prayer for mercy on his lips? Turning to the account of the Society's visit to Whitehall, to many it will come as a surprise to learn that fragments other than the Banqueting Hall still remain of old Whitehall Palace. A vaulted crypt of the early sixteenth century remains practically intact under the Board of Trade Offices at No. 7, Whitehall-gardens; this, we learn, on reference to Mr. Walter L. Spiers' valuable plan which accompanies the account, formed the cellar beneath the Great Chamber which adjoined the Great Hall. The work is part of Wolsey's rebuilding of York House, and is very similar in detail to Hampton Court. In addition to excellent photographs of the crypt and of the original four-centred entrance doorway, the description and plan prepared by Sydney Smirke, and published in "Archæologia" (1833) are reprinted. A Tudor wall with a large three-light window also survives, incorporated into the structure of the present Privy Council and Board of Trade Offices on the west side of Whitehall. This was the south wall of the building identified by Mr. Spiers as the covered tennis-court built by Henry VIII., and converted in the reign of Charles II. into a three-storied dwelling house. In this state it survived till 1846, when Barry rebuilt and extended to the northwards Soane's Privy Council Offices. To the illustrations of this building, cited by Mr. Spiers, we may add the view, by T. H. Shepherd, of Melbourne House in "Jones' London in the Nineteenth Century" (First Series), where it is shown very clearly to the south of Melbourne House, and a woodcut in the *Illustrated London News* (Vol. X., p. 60). Both these views give a very clear idea of the final appearance of the Whitehall front of the last fragment of the old palace above ground to disappear. It had been faced with new brick in 1816, and little original detail besides the buttresses and flanking octagonal turrets remained. The plan of Whitehall by Mr. Spiers, above referred to, shows with the nearest possible approach to accuracy the position of the Great Hall and Chapel and the other principal buildings of the Palace superimposed upon the Ordnance survey. It is the result of a careful collation of all available evidence, the plan made by Fisher in the seventeenth century and engraved by Vertue in 1747 for "Vetusta Monumenta" being taken as the principal source of information. A paper by Mr. Ernest Law on "Shakespeare at Whitehall" and an address by Lord Welby on the situation of the Cock-pit, which occupied the site of the Treasury buildings on the south side of Horse Guards' Parade, complete the account of this most interesting visit. The subject is further elucidated by Mr. Spiers in an article on the river front of Whitehall as shown in the painting at Windsor Castle of Charles II. viewing the Lord Mayor's progress from the





leads of the Palace. The remaining contents of the volume include papers by Colonel W. F. Prideaux on Lanesborough House, which stood on the site of St. George's Hospital, and on "Earliest Westminster," by Professor W. R. Lethaby.

The Architectural Association Sketch-Book, 1912. Edited by C. C. BREWER, THEODORE FYFE, W. CURTIS GREEN, and H. A. HALL. Containing seventy-two plates.

THE high standard of this well-known publication is fully maintained in last year's volume, and it abounds with evidences of the serious study of old work. Apart from fine draughtsmanship, skilfully reproduced, the editors are to be congratulated on having secured so many sets of drawings of particular buildings that there is enough material in this volume to illustrate almost complete monographs of several subjects of first-class importance. The day of pretty sketches of attractive "bits" has given place to another which demands thorough analysis and delineation, an immense benefit to the student, to say nothing of the gain to the possessor of such a fine publication as the one before us.

Of the seventy-two plates, the first thirty-three are devoted to English work, thirty-four are given to Italian, the remaining five plates being shared between France, Germany, Spain, and Turkey; this must undoubtedly be taken as some indication of the sources to which students are turning for inspiration; and in these days of haste to rush to the Continent we are glad to see that every encouragement is being given to study old work in our own country. Of the English work, which is arranged alphabetically according to locality instead of topographically or chronologically, we notice two very delightful fifteenth-century buildings—the so-called Priest's House at Brympton D'Evercy, near Yeovil, and the Abbot's House, at Muchelney, near Langport, Somerset. Both of these, from the pen of Mr. J. Macgregor, constitute valuable records, but we feel that in the case of the latter building the subtle differences of colour in the walling, due to the use of stone from two distinct quarries, called for a pencil wash drawing rather than for one in ink line. The sixteenth century is represented by Sackville College, East Grinstead, a good plate with general drawings, and some masonry details by Mr. F. H. Swindells; and by Mr. A. S. Carter's four plates of the ever charming Guesten Hall of the Charterhouse.

Strong as is this volume in pre-Renaissance examples from Ely, Lincoln, and elsewhere, in addition to those mentioned above, the greater number of plates are, as one would expect, drawn from later work. Burton Court, Chelsea, attributed no doubt on good authority to Wren, has afforded in its gate-piers and front to the street a good subject, and Mr. A. E. Maxwell has made the most of it by combining on one plate scale drawings, details, and a small photograph, and has given a complete representation of a delightful fragment of town architecture. One of the most valuable sets of plates is that of the Senate House, Cambridge, by Mr. J. H. Odom, in which one of the masterpieces of James Gibbs is well delineated, but we miss a fourth plate showing a section of the whole building, and particularly details of the finely-managed gallery which is such a feature of the interior. Gibbs can also be studied in the drawing of the east end of the Church of St. Martin-in-the-Fields, by Mr. W. L. Clark—rather too heavily washed for reproduction. The Brothers Adam, too, are represented, and excellent drawings of the gateway and screen at Sion House, Isleworth, by Mr. A. D. Clare, and of the Admiralty Screen, Whitehall, by Mr. V. O. Rees, with its missing columns replaced, will be welcomed by all who have come under the spell of this fascinating phase of design.

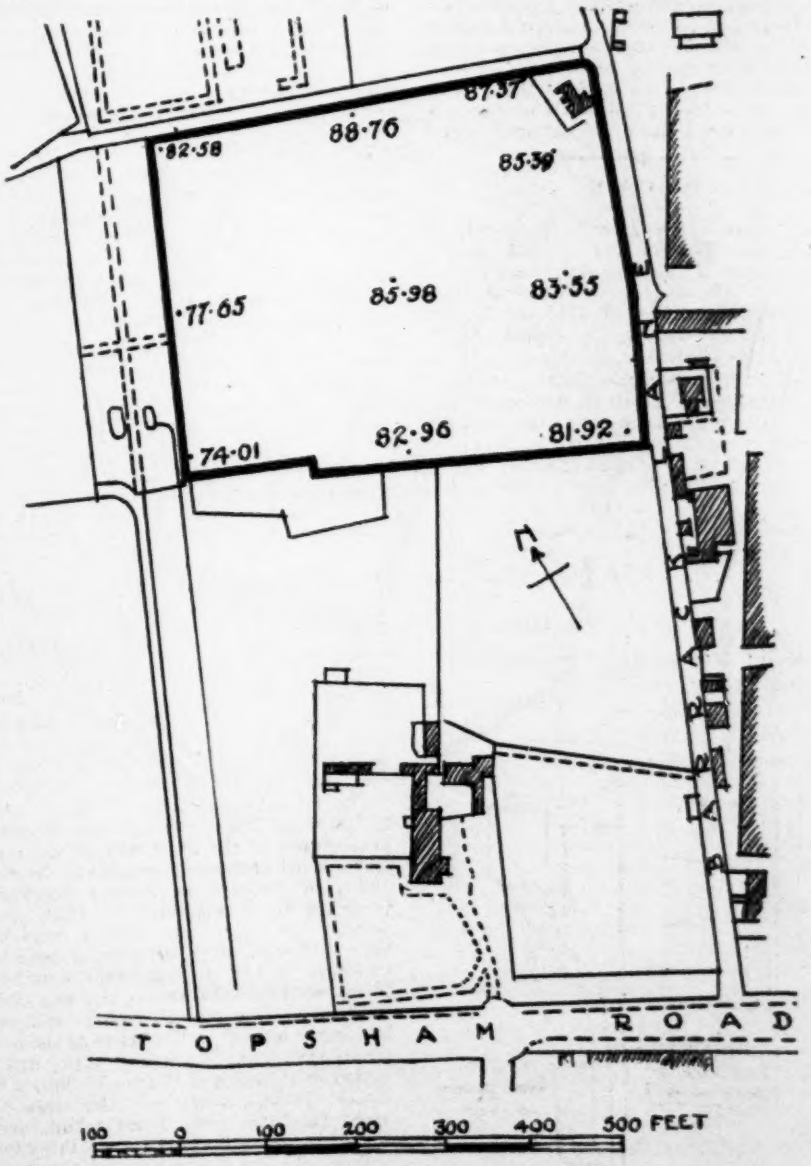
It is difficult to particularise on the Italian plates, where there is so much that is attractive and useful. Mr. Foggitt has carefully drawn the Church of the Badia, at Fiesole, and has given a delightful study of the unfinished west front, while his scale drawings of St. Pietro-in-Montorio, Rome, bring to mind one of the gems of the Renaissance in Italy, but one which, above all others, needs to be considered in relation to the peculiar site it was designed to occupy. The six plates of the Church of St. Spirito, Florence, from drawings by Mr. W. M. Keesey, make a fine set, showing not only Brunelleschi's beautiful Latin cross church, but also the octagonal sacristy designed by Giuliano San Gallo and Sansovino's vestibule to it, opening out of the south walk of the cloisters. As interesting as anything in this collection of Italian subjects are Mr. T. H. Worthington's five measured drawings from various sixteenth-century palazzi at Rome, those of the Palazzo Linotte, commonly attributed to Peruzzi, but here to Antonio San Gallo the Younger, being especially valuable. Mr. Piet de Jong has been industrious, and, amongst other things, has drawn the magnificent tomb of Cardinal Ascanio Sforza in that treasure-house of monuments, the Church of St. Maria del Popolo, Rome. Although ascribed erroneously in the index to another contributor, the telling perspective sketch of the staircase and vestibule of the Laurentian Library, Florence, is by the hand of Mr. Leslie Wilkinson, who, by the aid of a small key-plan, makes clear the unusual arrangement of the steps. Mr. Wilkinson also contributes the only example of Spanish work, a double plate drawn from the Palace of Charles V., at Granada. The Italian series closes with a good measured drawing of the principal doorway from the Church of St. Maria della Quercia, Rome, one of several from the pencil of Mr. Alick Horsnell, who, with others too numerous to mention, has helped to make up an exceptionally strong issue.

The Church Chests of Essex. By H. WILLIAM LEWER and J. CHARLES WALL. (Talbot & Co. 15s. net.)

ESSEX is well known of its sons as yielding to no other county in antiquarian interest, and the authors of this handsome volume—both of them Essex residents—may be congratulated on offering to the general public yet another instance of their county's wealth in old-time things. In so doing they to a large extent break new ground; for the homely chests in which, in these days, the parish registers are stored (and which too frequently are relegated to the church-tower, there to serve as receptacles for the parish clerk's brushes and dusters) have not hitherto had their historians, and it will come as a surprise to many that so much can be written, and so well, upon so apparently slight a subject. Perusal of the authors' pages, however, and the many well-executed woodcuts interspersed in the text, offer convincing testimony to the importance of collecting information about these interesting adjuncts to ecclesiastical furniture, extant examples of which date from at least as far back as the twelfth century, and which vary in decoration from the roughly-adzed "dug-out," hewn from a solid oak trunk and closely banded with iron, to the ornate linen-patterned Tudor chest, the elaborately-panelled and carved coffer of Jacobean times, or the marquetry chest of a somewhat later period; these latter being often domestic linen-chests which have been bequeathed by their owners for the service of the Church.

The volume opens with a short historical account of chests in general, from Egyptian and Biblical times downwards, followed by a descriptive *résumé* of the various kinds of chests employed in this country, whether for domestic purposes, for storing treasure, or for the preservation of manuscripts and deeds, or of saintly relics; and these general outlines lead to a special description of church chests, whether cope-chests, alms-boxes ("poor men's chests"), or deed-chests, culminating in the all-iron boxes which were the immediate precursors of the modern safe. Special reference is, of course, made throughout to examples in the county under notice, and a chapter is devoted to a dissertation on the methods of transportation of large chests.

The authors tell us that the earliest church-chests were provided, in response to Royal or Papal Ordinance, specially for the receipt of alms, usually for the prosecution of the Wars of the Crusades; but, later, such purpose being no longer a dominating factor, money-slits were



Site of proposed Exeter Hostel. (*See p.* 402.)

omitted, and the chests were employed for the safe keeping of the altar furniture, books, and vestments belonging to the church; and thus arose special forms of chest for special purposes, as, for instance, the large semicircular or quadrant-shaped cope-chests still to be seen at York and other of our cathedrals.

The second half of the book consists of a complete list of Essex churches still possessing chests, with a detailed description and illustration of each of the latter, which vary in size from the giant "dug-out," 8 ft. 1½ in. long, at West Hanningfield, to mere midgets, such as one of those at Canewdon (1 ft. 8 in. long).

An excellent coloured plate of the well-known thirteenth-century painted chest at Newport, "the most valuable example of a church chest in all England," and originally an altar-retable, forms a fitting frontispiece.

A full index and some blank leaves for notes at the end of the volume are commendable features; and the text is well printed with wide margins on good white paper.

We can cordially commend this volume to the attention of all those interested in ecclesiastical art.

COMPETITION NEWS.

It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

The list of current Competitions is printed on page 415.

New Municipal Buildings, Dublin.

Mr. Albert E. Murray, R.H.A., F.R.I.B.A., was the assessor in this competition, and his award is as follows:—First place, Messrs. McDonnell & Reid, Ely-place, Dublin; second (£150), Mr. F. G. Hicks, 86, Merrion-square, Dublin; third (£100), Messrs. O'Callaghan & Webb, 31, South Frederick-street, Dublin.

University College, Exeter: Hostel for Sixty Students, with Gymnasium and House for Professor of Education.

First premium £50, with a further sum of the same amount if the work should be abandoned; second premium, £50; third premium, £30. Questions to be sent in before April 28, and designs sent in by June 7.

Mr. Edwin Cooper, F.R.I.B.A., assessor.

Drawings Required.—Block plan to $\frac{1}{16}$th scale. Plan of each floor showing fittings. Two sections and four elevations to $\frac{1}{16}$ in. scale, with small portion of detail to ½ in. scale.

Total amount to be expended, £12,000.

Accommodation.—The Corporation leave it to competitors to use their own judgment as to the position to be occupied by the building upon the site, but suggest it should be placed on the west side. Care should be taken to leave as large a portion as possible for playing fields, good aspect for all rooms and professor's house. The hostel is to accommodate sixty.

Ground Floor.—Entrance hall, small waiting and reception room, housekeeper's-room, store and sewing room, luggage store near luggage lift, manservant, living-room, bedroom, water-closet, etc. (*Note*—This man might act as groundsman and attend to the heating, etc.), recreation-room, about 750 ft. super., study, about 600 ft. super. The reception-room and study should have folding screen dividing, so that they can be thrown into one large room when required. Cloakroom for students, lavatories, bootroom, games store, cycles, coat store, etc., dining-room for total number of students, service-room and pot store, large kitchen, scullery, servants' hall, larders and vegetable stores, water closet for servants, cover, etc.

First Floor.—Students' study bedrooms, for about forty, each approximately 800 ft. cube. Each room is intended to be fitted with bed, wardrobe, dressing table, small bureau, and bookshelf. Provision must be made for good ventilation and lighting, and each study bedroom to be fitted with radiator under control of occupant. Luggage lift, service stairs, prefects' room, assistant masters' sitting-room, bedroom, bath, water-closet, and wardrobe, etc., visitors' bedroom. Bathroom and lavatories, shower baths, and housemaids' closets and water-closets to have terrazzo floor.

Second Floor.—Six servants' bedrooms, entirely disconnected, with bath, housemaids' closets and water-closet, housekeeper's bedroom, twenty students' bed-sitting-rooms, as upon first floor, assistant masters' as on first floor, sickrooms, dayroom or sitting-room, sickroom connected with bath, housemaids' closets and water-closet, but all disconnected from remainder of students. *Note*—The main stair to be well placed, and all corridors well lighted and ventilated. The heating to be low-pressure hot water, each bed-sitting-room to be supplied with a ventilating radiator. The construction throughout to be fireproof.

Professor's House.—The professor's house to be connected with hostel by covered way, or as may be best suggested by competitors.

Accommodation to be Provided.—Entrance hall, with small lavatory and cloaks, small study, dining-room, and drawing-room, service-room, kitchen, scullery, and the necessary out-offices, servants' water-closet, coal store, four bedrooms, bath, water-closet, and two servants' bedrooms.

Gymnasium.—It is suggested that the gymnasium should also be connected to the hostel with a covered way, and its accommodation should provide dressing-room fitted with lockers and small gallery on the exterior walls; two or three fives courts should be arranged.

Newcastle-upon-Tyne: Plan showing the Walker Estate.

Newcastle-upon-Tyne: Suggested Laying-Out of a Portion of the Walker Estate.

The Corporation offer premiums of £50, £30, and £20, which will be paid to the authors of the designs placed first, second, and third by the assessor.

The competition will be assessed by the Housing Committee of the Corporation (with the assistance of the City Engineer and City Estate and Property Surveyor), but no guarantee is given to employ the author of the design placed first.*

Designs are to be delivered by June 19, 1913.

The drawings submitted by competitors shall be a block plan drawn to a scale of 1 in. to every 208·33 ft., or 25·344 in. to the mile. Any sections of the ground submitted to be of a similar longitudinal scale, but of a scale of 1 in. to every 8 ft. vertically. Also typical transverse sections of the streets drawn to scale of 1 in. to every 8 ft.

The minimum width of a main street shall not be less than 40 ft., and of a subsidiary or minor street not less than 28 ft., but the measurement between the main wall of the houses or buildings in the subsidiary or minor streets shall not be less than 70 ft.

The block plans and sections shall indicate the intended streets, roads, and the sites of the proposed houses, with proposed net rents (that is, allowing for all rates and taxes being paid by the tenant), together with the lines of all sewers, the inclination of the streets, the depth, inclination, fall, size, manholes, ventilators, gullies, etc., the widths of the footways and carriageways, and the nature and thickness of the materials of which the street surfaces are proposed to be formed.

The drawings are to be prepared on white paper and mounted on framed stretchers with white margins.

Plans may be submitted in pencil, with flat colour washes, but no shading.

The proposed houses on the block plan to be shown in red.

The houses are to be semi-detached, and in blocks of three, four, five, or six houses at the discretion of the competitor, but not to exceed an average of fifteen to the acre over the area of the 80 acres, or 1,200 in all, each house to have a bath and with one, two, or three bedrooms in proportions to be arrived at by the authors.

A site of 2 acres must be shown for a school, but no other sites need be shown for other public buildings.

Each set of drawings is to be accompanied by a short report, which is to be of a general character, with particulars of the materials proposed to be used in the roads and houses. The report must also state the estimated cost of the streets, sewers, etc., based on a price per yard run, also the estimated cost of the houses, together with the boundary walls, fences, outbuildings, etc., and the estimated rents.

Arbroath Public Baths.

Premiums of £25, £15, and £10 are offered for designs for public baths at Arbroath. Mr. James Thomson, C.E., City Engineer of Dundee, is the assessor, and drawings must be sent in by April 12.

* It is questionable whether the clause will be approved by the Royal Institute of British Architects.

Plans for the Federal Capital.

With reference to the notice on page 114 of the *Board of Trade Journal* of October 17, 1912, relative to the award of premiums for designs for the new Federal Capital City (Canberra), it is stated in the January issue of a Schedule issued by the Commonwealth Department of Home Affairs that the Departmental Board appointed to investigate and report on the suggested designs for the laying out of the Federal Capital City were unable to recommend the adoption in its entirety of any one of the designs, and advised approval of a plan they had prepared. This plan is based essentially upon the dominating conception presented in the design which was awarded the first prize, the remainder of the plan being evolved therefrom. The Board state that the configuration of the country did not lend itself to the adoption of parts of the first prize design, but, nevertheless, it may be accepted that the salient features of the prize-winning designs, and also of those designs which were purchased, have been utilised to the fullest practicable extent. The Board's design has now been adopted, and instructions have been issued with a view to the survey of the city site and the commencement of other work incidental to the laying out of the city with the least avoidable delay.

The adoption of a design for the city having determined the sites for the principal public buildings, it is proposed that competitive designs shall be invited for the whole official block—Parliament House, Capitol, Administrative Offices, Public Library, etc., so as to give competitors a much freer hand in the designing of a complete scheme, it being thought that if competitions were held for designs for each building separately the value of the artistic and general ideas of the successful competitor might perhaps be absolutely lost in the design and grouping of the supporting structures.

A reduced copy of the approved plan drawn up by the Departmental Board may be seen at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C., by United Kingdom architects, etc., who may be interested.

GENERAL NEWS.

Professional Announcement.

Mr. Robert Atkinson, A.R.I.B.A., has removed from Old Queen-street, S.W., to 199, Piccadilly, W., and has entered into partnership with Mr. George L. Alexander, A.R.I.B.A. Their telephone number is Victoria 5964.

The London Beaux-Arts Committee.

We have received a copy of a circular issued by the Beaux-Arts Committee, established to "promote improved methods of architectural training in Britain," under the patronage of the French Société des Architectes Diplômés par le Gouvernement. As we have already mentioned, the Committee of Management include the Right Hon. Lord Saye and Sele, Sir George Riddell, M. Alphonse Defrasse (President of the Société des Architectes Diplômés), Messrs. Arthur Davies, A. R. Jemmett, H. V. Lanchester, Edwin L. Lutyens, A.R.A., E. C. P. Monson, Percy Tubbs, and others. The atelier is at 16, Wells-mews, Wells-street, Oxford-street. No attempt is to be made to introduce French design or details, but simply to promote the system of co-operation and study which have been found to be advantageous in France. The entrance fee is £1 1s., and students pay £1 10s. a month when engaged on a competition.

Exhibition of Lithography.

An exhibition of lithography is being held in the London County Council Central School of Arts and Crafts, Southampton-row, W.C. The exhibition consists mainly of the work of lithographic classes maintained or aided by the Council, together with historic and other examples. Practical demonstrations of processes will be given at intervals. The exhibition remains open until the 30th inst. (Saturdays excepted), and admission is free from 12 noon to 9 p.m.

The Woolner Statuary.

The remaining works of the late Thomas Woolner, R.A., which have recently been on exhibition at his former studio in Welbeck-street, are to be sold there next month under the hammer of Messrs. Knight, Frank, & Rutley. They include original busts of famous personages of the nineteenth century taken from life. Dickens, Carlyle, Frederick Denison Maurice, Darwin, Newman, Beaconsfield, Tennyson, Bartle Frere, Browning, and many statesmen, soldiers, literary and scientific celebrities appear there. The catalogue also includes the tools and plant used by the sculptor as well as several ideal works in bronze and marble.

Aberdeen Technical College.

It is proposed to build a new school of engineering and chemistry in connection with Robert Gordon's Technical College, Aberdeen. Plans by Mr. Ogg Allan have been considered by the committee, and they will be adopted subject to the approval of the Scotch Education Department.

CORRESPONDENCE.

Regent-street Quadrant Report.

SIR,—At the recent exhibition of Mr. Norman Shaw's work held at the premises of the Architectural Association two drawings that were shown seemed to suggest that Mr. Shaw had himself anticipated the recommendation of the Committee that the adjacent buildings should harmonise with the Piccadilly Hotel, but should be treated in such a way as to meet the views of the shopkeepers. These drawings were the design for Messrs. Swan & Edgar's front in Piccadilly, and they showed the main cornice of the hotel carried round into Piccadilly on big isolated columns, which formed a kind of open semicircular loggia at the angle of Piccadilly and the Quadrant. The treatment of the elevation along Piccadilly was harmonious with what has already been built, but quite different from it, and in particular the huge piers and arches had given place to small piers carrying a horizontal entablature, or, it may have been, just a shop fascia or cornice.

I am describing the design from memory, but the impression left on one's mind was that of a really fine façade of a kind that the shopkeeper should take no particular exception to. No doubt the Committee have had this design before them, but it would be interesting if it could be published. ARTHUR KEEN.

Indifferent Quantities.

SIR,—It is common knowledge that quantities prepared by architects are seldom satisfactory, the obvious reason being that architects are not trained to practise as quantity surveyors.

It is to the interest of all parties concerned to have satisfactory quantities, the object being to arrive at a contract sum that represents fair value for the work to be carried out by the builder; consequently, it is clear that all lumping of items, inaccurate and insufficient descriptions and general paragraphs to cover work not detailed in the bill, tend to defeat that object.

The remedy lies with the builders. They must agree to refuse to tender on quantities which do not bear the name of a responsible surveyor. EDMUND J. BURR, F.S.I.

Recent Progress in Painters' Materials.

SIR,—I notice in your issues of March 21 and 28 a paper by Mr. A. S. Jennings under this title, and I venture to trespass on your space so far as to point out that in this paper various statements are made as recognised and indisputable facts which are by no means generally accepted by those who have made a study of paint from the scientific aspect. I refer more particularly to the statements concerning white-lead, calculated to encourage the agitation for the prohibition of this invaluable pigment; it behoves architects and all who are concerned in the use of paint to investigate the facts and consider what would be the result if this agitation were carried to the point of legislation.

Mr. Jennings assumes, in the first place, that the use of white-lead constitutes a danger to the painter which is inevitably very serious; investigation of the actual facts shows that lead-poisoning is steadily decreasing in those branches of the industry where simple regulations for care and cleanliness are in operation, and there is little room for doubt that the extension of such regulations to operative painters would reduce the risk to one of very slight dimensions.

Speaking of the law recently enacted in France providing for the abolition of the use of white-lead in 1915, Mr. Jennings says, "If Frenchmen can do without white-lead, why cannot we?" I would point out that it remains to be seen whether they can do without it; in fact, as the time approaches for the law to come into operation there is little indication of any decline in its use, but every indication that this proposed law will have to be abandoned as impracticable.

Why is this? With all deference to Mr. Jennings, the general experience of practical men is that white-lead has exceptional qualities as a paint material, and that no substance has yet been discovered which can successfully replace it for purposes where paint is used for purposes of protection.

Mr. Jennings advocates the substitution of zinc oxide as equal, if not superior, to white-lead in durability. The evidence of practical men is, however, irresistible that this is by no means the case, and this experience is supported by sound scientific reasons. Mr. Jennings offers little in the way of evidence to support his suggestion, and such technical reasons as are given are absolutely unsound. I will only refer to one instance. One of the reasons given in support of zinc oxide is its fineness. He assumes that the fineness of pigments determines their durability (which as a matter of fact is open to question), and that zinc oxide is finer than white-lead. But in another part of the paper he instances a series of photomicrographs I recently prepared for Messrs. Griffin & Co. to prove the relative fineness of another pigment. He refrains from mentioning that the same illustration clearly shows that white-lead is considerably finer than zinc oxide. Facts speak for themselves. The question of the abolition of white-lead is of great importance to all concerned in building, and if its abolition were agreed to as the result of misrepresentation, however disinterested, I for one feel that the result would be disastrous.

NOËL HEATON.

SIR,—In the report of Mr. A. S. Jennings' paper, which is published in the *Builder*, appears the following statement (March 21):—"You will also be aware that some two years since a Departmental Committee was appointed to take evidence and consider the subject of lead-poisoning among operative painters, so grave did the danger appear. I must not anticipate the report of that Committee, although it is common knowledge that either the recommendation will be a total prohibition of the use of lead, or, at the least, such irksome and drastic regulations concerning its use as will render everyone who uses paint very desirous of finding something to take its place."

In Mr. Jennings' paper there are many extraordinary assertions, most of which appear to arise from his touching conviction that zinc oxide paint is superior to all others, and some of them are so silly as not to need contradiction. But this assertion as to the intentions of the Departmental Committee is a more serious matter, and those who make it or publish it should give authority for it. It is most improper that the private deliberations of a Committee thus officially constituted should be exploited to advertise a particular brand of paint. E. S. G.

INTERCOMMUNICATION COLUMN.

Burglar Alarms.

SIR,—I should be glad if any of your readers would give their experiences of the various kinds of burglar alarms—not necessarily confined to the ultimate test—as suited to an occupied house, i.e., where communication with a police station or boy messengers' office is not important.

I am aware of the system of "treads" in the floor, working bells and lights by clockwork, which has been satisfactorily tried; but desire to know of any other efficient methods. I enclose my card. B.

BRADFORD TOWN HALL.

A new entrance hall to the Bradford Town Hall is being built from the designs of Mr. W. Williamson, the City Architect, at an approximate cost of £8,000. The contractors are Messrs. Michael Booth & Sons.

Leading Contents.

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ILLUSTRATIONS.

The Façade of a Royal Palace.

IN our issue of February 21 we illustrated Mr. Cyril Farey's "Façade of a Royal Palace," the design which was awarded the R.I.B.A. Tite Prize this year. We now reproduce the scheme of Mr. A. B. Llewelyn Roberts, submitted under the name of "Juvenis." Although not placed, this was considered to be one of the best compositions submitted (see the *Builder*, January 24, p. 102). In his review of the various drawings at the Royal Institute Mr. Curtis Green said that the design by Mr. Roberts had an extraordinary family likeness to that by Mr. Farey. "I am tempted to say the voice is the voice of Juvenis, but the hand is the hand of Palladio."

House at Hitchin-hill.

THIS house occupies a curious position at the top of Hitchin-hill, at the junction of the main London and Preston roads. The cuttings on each side made in bygone times to ease the gradients have left a promontory, standing high above the road levels, on which the house is placed.

In order to preserve as much of the site for garden as possible the house is of a wedge-formed plan.

It has been built by Messrs. Willmott, of Hitchin, at a cost of about £1,600.

S. B. RUSSELL.

Ideal Homes Pavilion.

THIS pavilion was erected for the Ideal Homes Exhibition of 1911 for Messrs. Phillips & Son, Ltd., heating engineers, as an advertisement of the possibilities of several novelties which they were introducing, and was fitted with an automatic regulator.

The design was based on the late Greek revival in London, with a certain amount of freedom internally.

The four corners were cut and a cruciform plan obtained internally to allow of space for trade fittings.

It was erected entirely (in two weeks) of fibrous plaster by Messrs. Higgs & Hill, Ltd., at a cost of just over £400, and they likewise executed all modelling and joinery work. Messrs. Escaré & Denelle supplied the electrical fittings and Messrs. Hampton the curtains, etc.

MEETINGS.

FRIDAY, APRIL 4.

The Royal Sanitary Institute.—Mr. H. C. Adams on "Scavenging, Disposal of House Refuse." 7 p.m.

SATURDAY, APRIL 5.

The Architectural Association.—Visit to the War Memorial at Eton College.

Edinburgh Architectural Association.—Visit to Holyrood Palace.

MONDAY, APRIL 7.

Royal Institute of British Architects.—Mr. Cecil Brewer on "American Museum Buildings." With lantern illustrations. 8 p.m.

The Society of Engineers (Incorporated).—Mr. W. Ransom, A.M.Inst.C.E., on "The Status of Engineers and Engineering, with Special Reference to Consulting Engineers." 7.30 p.m.

The Surveyors Institution.—8 p.m.

The Incorporated Institute of British Decorators.—The Institute's dinner, to be held at the "Trocadero" (Oak Room), Piccadilly Circus. 7.15 p.m.

Royal Society of Arts.—Professor J. E. Petavel on "Aeronautics." 8 p.m.

TUESDAY, APRIL 8.

The Royal Sanitary Institute (Lectures on Hygiene).—Professor H. R. Kenwood on "The Home." 7 p.m.

Builders' Clerks' Benevolent Institution.—Annual dinner, King's Hall, Holborn Restaurant. 6 p.m.

London County Council School of Building, Brandale-road, Brixton, S.W.—Special lecture on "Roofing," by Mr. F. G. Dawson. 7.30 p.m.

University of London (British Museum).—Mr. Kaines Smith on "Greek Art and National Life." 4.30 p.m.

The Institution of Civil Engineers.—Mr. William Carstairs Reid on "The Yield of Various Catchment-Areas in Scotland"; Mr. Edward Sandeman, M.Inst.C.E., on "Measurement of the Flow of the River Derwent, Derbyshire"; and Sir Francis Joseph Edward Spring, K.C.I.E., M.A.I., M.Inst.C.E., on "Coastal Sand-Travel near Madras Harbour." 8 p.m.

WEDNESDAY, APRIL 9.

Edinburgh Architectural Association.—Mr. E. MacRae on "A Comparison of Rural Church Towers in Norfolk." 8 p.m.

Royal Society of Arts.—Mr. F. Bailey on "Electric Supply in London." 8 p.m.

THURSDAY, APRIL 10.

Carpenters' Hall, London-wall.—The Rev. F. W. Macdonald on "Social Life in England towards the close of the Eighteenth Century." 8 p.m.

The Society of Architects.—Professor Wallace A. Rimington on "Some Little-known Continental Sketching Grounds." 8 p.m.

The Concrete Institute.—Mr. E. Fiander Etchells on "Structural Engineering." 7.30 p.m.

Society of Antiquaries.—8.30 p.m.

Sheffield Society of Architects.—Annual general meeting.

University of London (Victoria and Albert Museum).—Mr. Kaines Smith on "Mediæval Minor Arts." 3.30 p.m.

SOME PICTURE EXHIBITIONS:

PIRANESI.

AT No. 21, York Buildings, in the precincts of the Adelphi, there is now on exhibition the two distinct states of the "Carceri d'Invenzione" etchings, together with portfolios of other works from the tireless needle of Giambattista Piranesi. It would be difficult to find more appropriate surroundings for such works of art, for Robert Adam, the architect of this district, was a close friend to the famous etcher; indeed, he owed no small part of his admiration for ancient Roman architecture to the contagious enthusiasm of the Italian artist.

The prison interiors, which are the attraction of the exhibition, depict the impressions experienced by Piranesi during the workings of a delirium. "They resembled what he felt he had seen in a nightmare of maniacs, of dungeons, of prisons, of torture chambers, of endless staircases in league high bedlams, where the culprit groped along galleries leading to edifices which were always a staircase beyond the gallery he had just crossed. . . . The hopelessness of these interminable ladders of stairs with the figure advancing, without, however, making progress, seem to paralyse the vitality of the onlooker."

The two states of the plates prove the depth of the sensations received by his impressionable brain, the first faintly recording the tortuous scenery of an inferno, as though the mind had not recovered from the first stupendous shock; while the second, in gigantic contrast, holds the imagination spellbound: appearing as though with the lapse of time the fleeting visions of the erstwhile sick brain slowly unfolded themselves in detail, to be graved by the artist for time eternal.

The "Carceri" were published by Bouchard at Rome in 1751, and copies of the plates soon found their way into the hands of the virtuosi of the day. At present only five complete sets of the first state appear to be known; they are located as follows:—One in the Soane Museum, one in the British Museum, one at Dresden, one at Munich, and one at Rome. Mr. Herbert Batsford first detected the differences in the states during his researches, and was instrumental in obtaining for the British Museum collection the complete set now housed therein. The importance of a study of all the series of the etchings, especially to the architectural designer, cannot be overestimated; the leading architects of the second half of the eighteenth century had copies of some of the plates, while Chambers, counselling young Soane, then about to begin his travels in Italy, advised him to see Piranesi and consult the etchings. "The works of those which have stood the test of ages have a claim to that respect and veneration to which no modern can pretend."

PAINTINGS BY MR. ARTHUR E. HENDERSON, F.S.A.

This interesting collection of some forty oil paintings, water-colours, and designs should prove of exceptional interest to architects, Mr. Henderson's archæological researches in Greece and Asia Minor having contributed so much to the study of antique art.

Among the drawings exhibited are several executed in oil colours, the most prominent of these being a study of the Mosque of Sultan Suleiman at Constantinople. This drawing is distinguished alike for the masterly composition of the picture and the high character of the technique. The Arch of Titus at Rome affords another example of the artist's skill as a painter of architectural subjects in oil. When it is remembered how little has been achieved by architectural draughtsmen, or even by painters for that matter, in regard to the correct delineation of buildings in oil colour, it appears strange that water-colour drawing, or perhaps the mere tinting of architectural drawings, should still prove to be the *via media* of the artist. There is, of course, the classic example of Canaletto, that master of precision, who drew in oil colours scenes which many lesser mortals would not dare attempt in pencil; or of Claude, who could handle architectural ruins with the same facility as the placing of the brown tree; but the medium of oils opens up vast possibilities to-day. From a study of Mr. Henderson's drawings, whether of the Cloisters of St. John Lateran at Rome, old houses at Strasbourg, or the Cathedral at Monreale, it appears that a new departure in accurate delineation offers itself. Not only can the artist depict the detail of a building with exactitude, but it also lies within his power to transmit to canvas some fact of that quality and depth of colour which escapes the water-colourist, however brilliant the latter may happen to be.

Mr. Henderson, however, has not neglected the practice of water-colours, as many of the exhibited drawings reveal. Such subjects as the steeple of Christ Church, Spitalfields, the interior of Amiens Cathedral, and the steeple of St. Anne's Church, Limehouse, show his talent in this direction. In his design, "The Offering of the Girdle," which recently obtained a silver medal at the City of London Guilds Institution, a study of the shrine of the first temple of Diana at Ephesus is effectively introduced. The exhibition at 19, Killieser-avenue, Streatham Hill, S.W., is open to all readers of the *Builder* on presentation of a visiting-card.

ARCHITECTURAL ETCHINGS.

An exhibition of architectural etchings is now being held at the Goupil Gallery. Etching, as a medium of artistic expression, has an intrinsic charm entirely its own. To-day its value has come to be recognised in a manner altogether unprecedented, for not only is it possible for the collector of modest means to possess a genuine work of art, or for that matter to fill his portfolio with several, but the limitation of each separate edition to a specific number adds further interest. To architects fine etchings make an especial appeal, for the method of their production, the feeling of each line, and the massing of each attribute recalls the sterner duty of assembling the component parts of a structure in the concrete.

Mr. Hanslip Fletcher's work is distinguished for the selection and interpretation of diverse subjects. His technique is good, and, while he disdains *sentiment*, he renders the architectural aspect of cities with more than ordinary sympathy. To mention a few etchings of topical interest, the new buildings in Aldwych, "Modern Athens," and Regent-street form the principal features of the exhibit. Possibly Mr. Fletcher may be induced to widen his range of operations to include the modern aspect of the great cities of the Continent and America; his tendencies appear to be strongly directed to the modern note.

FIFTY YEARS AGO.

From the *Builder* of April 4, 1863.

What is a Bedroom?

I WANTED, advertised, and sought for a house with at least five bedrooms. In many houses stated to contain the number required I found that what were termed bedrooms were frequently literally cupboards. Houses described as containing five bedrooms I have often found contained only two bedrooms proper, the others being a dressing-room, an attic, and a large cupboard with a window in it.

Can a small room, without a fireplace or any means of ventilation, except the window or the door, be possibly adapted for a dormitory? Is not a sleeping-room as important to health as a sitting-room? Is it right or humane to place a servant or children in nooks and corners where their strength must inevitably be undermined?

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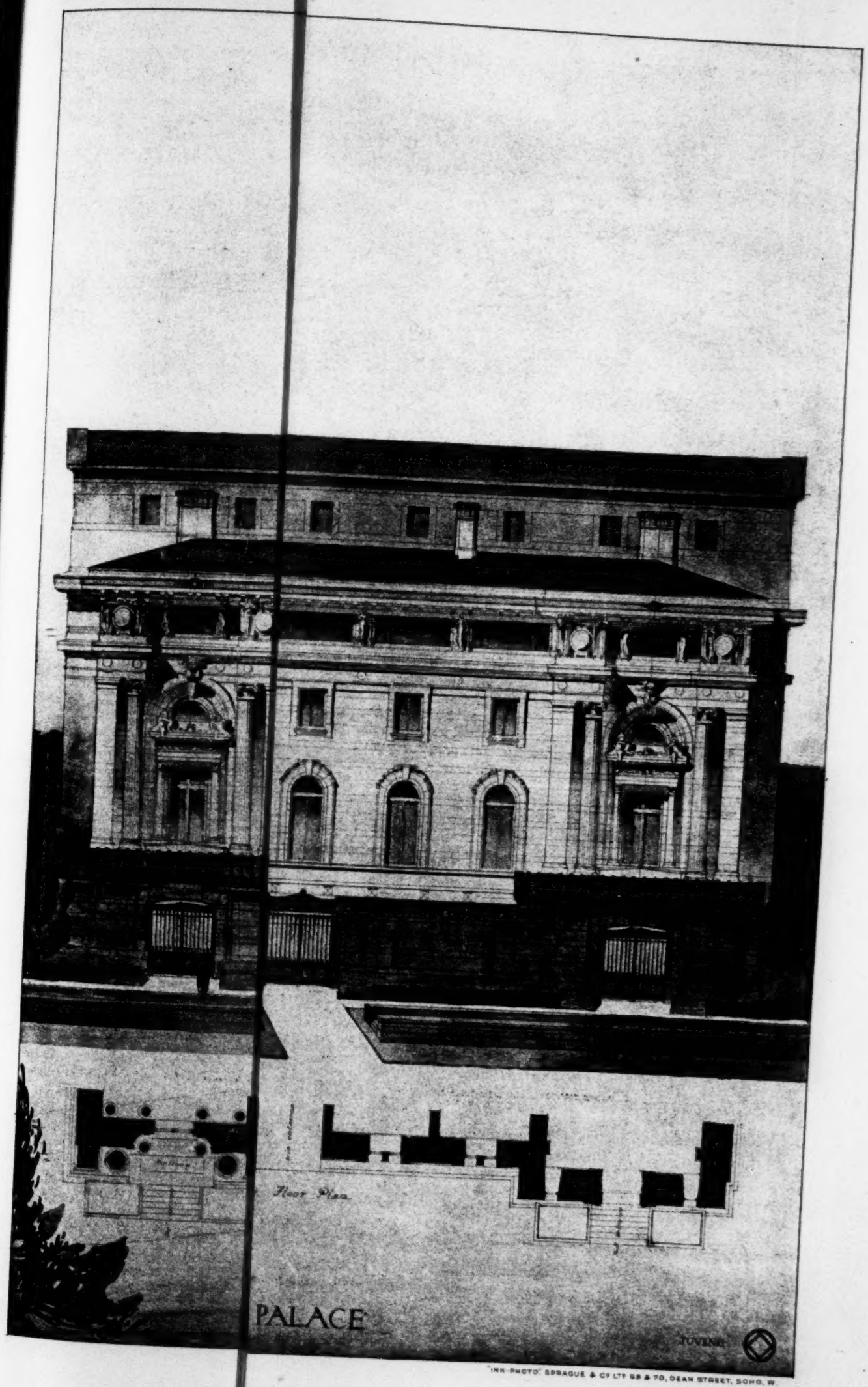

"INK-PHOTO" SPRAGUE & Co LTD 68 & 70, DEAN STREET, SOHO, W.

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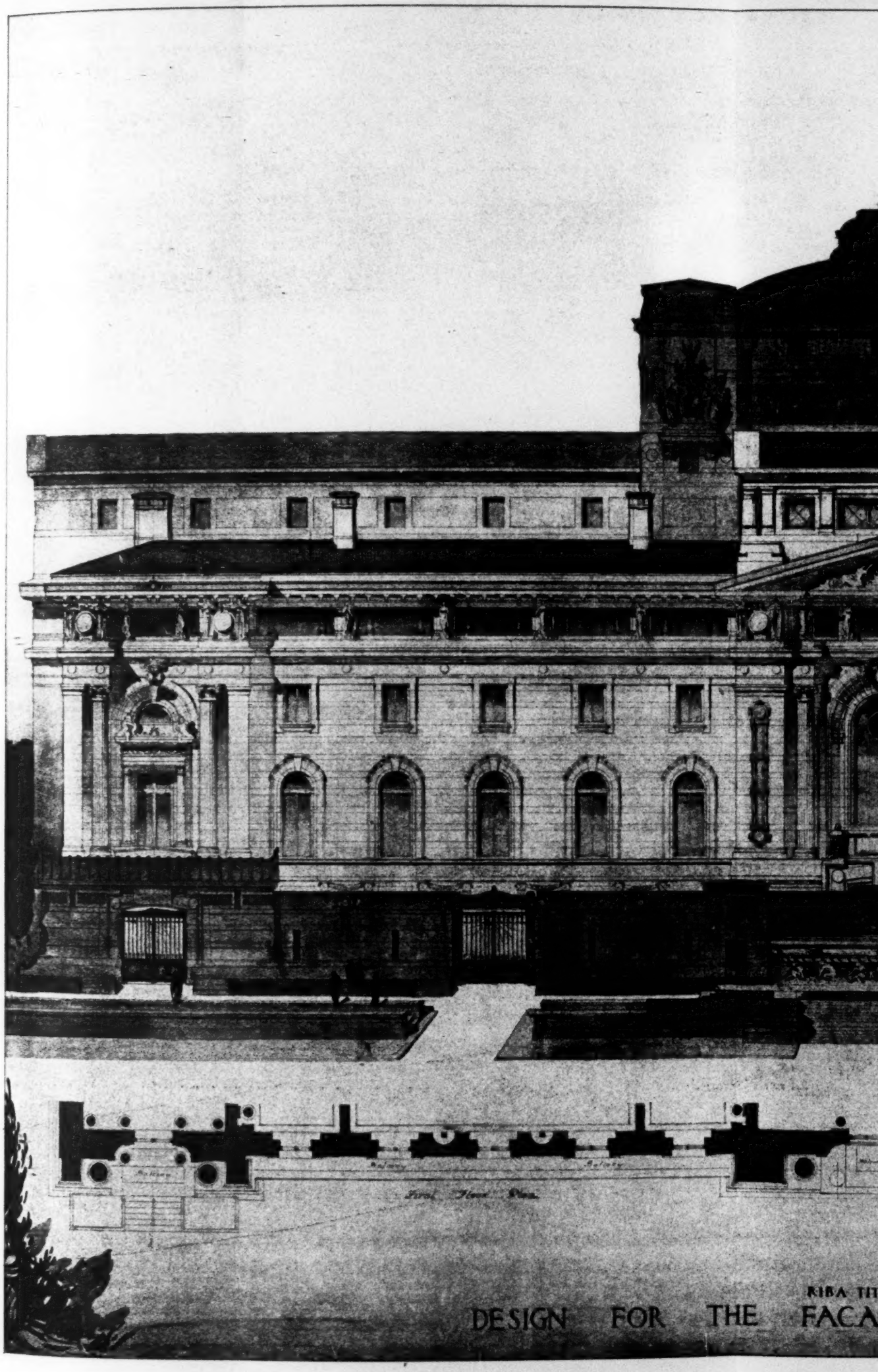
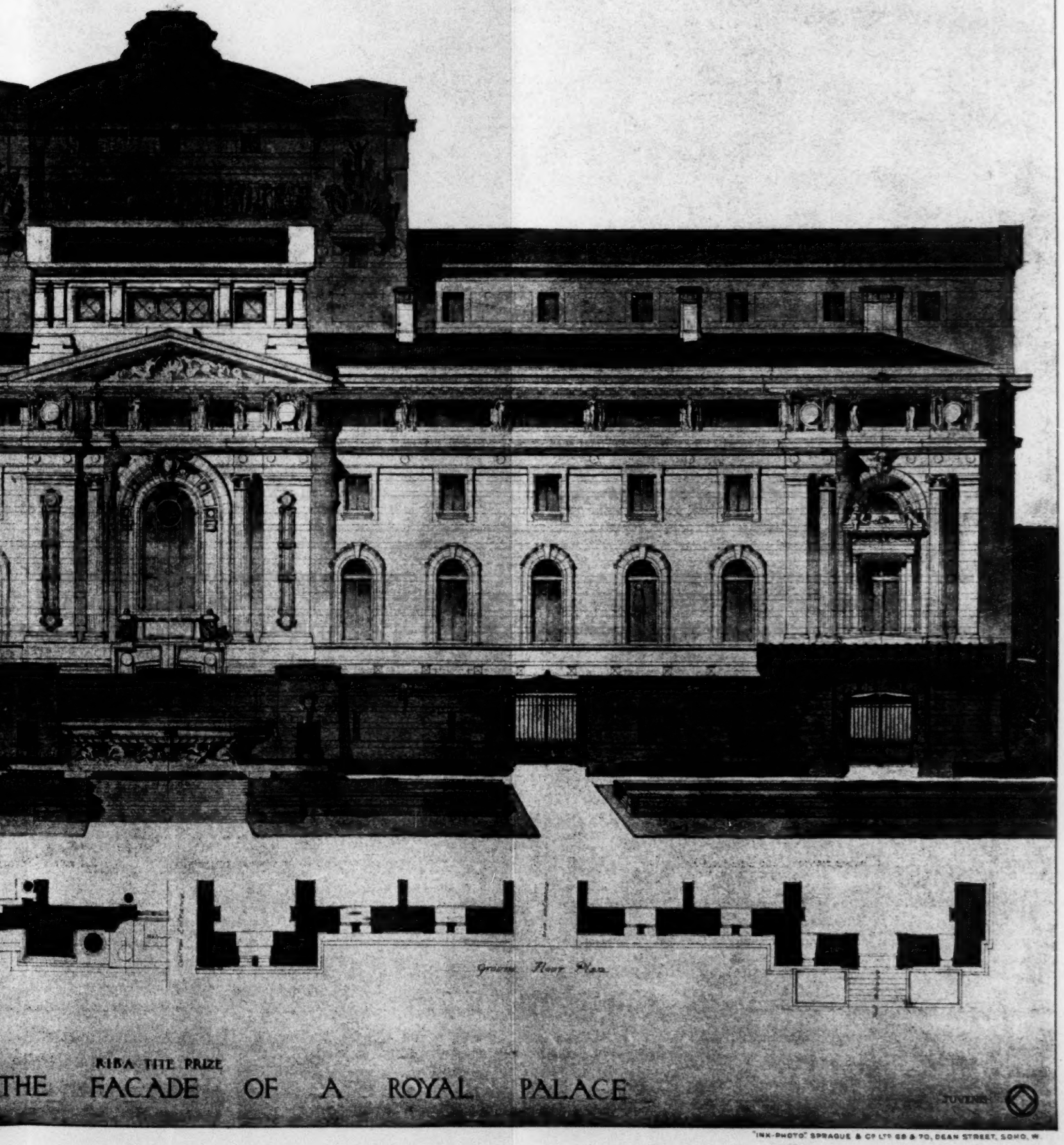


R.I.B.A. TITE PRIZE DESIGN



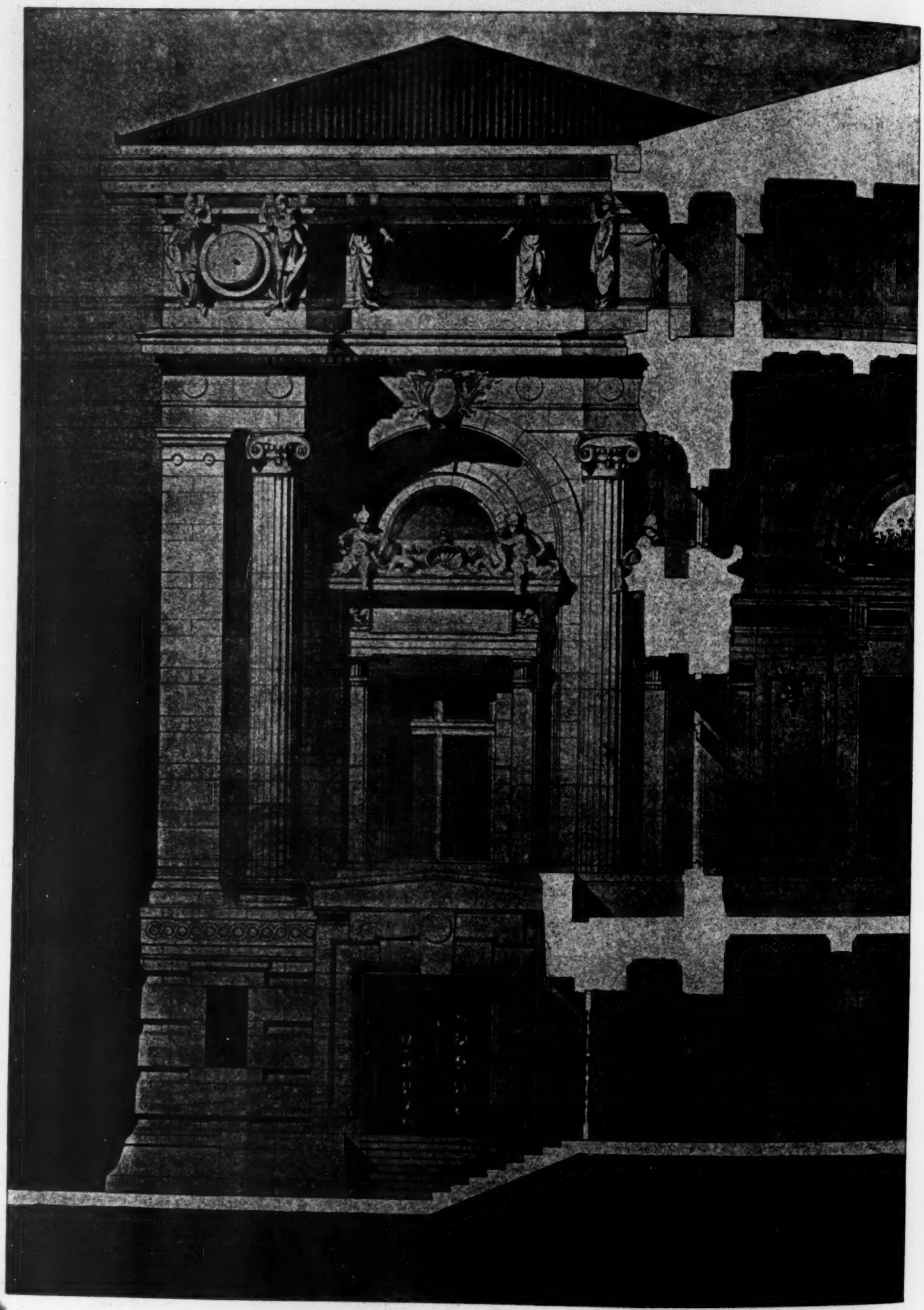
RIBA TITE PRIZE.

THE FACADE OF A ROYAL PALACE.

JUVENIS

"INK-PHOTO" SPRAGUE & Co LTD 69 & 70, DEAN STREET, SOHO, W.

TITE PRIZE DESIGN.—By Mr. A. B. Llewelyn Roberts.



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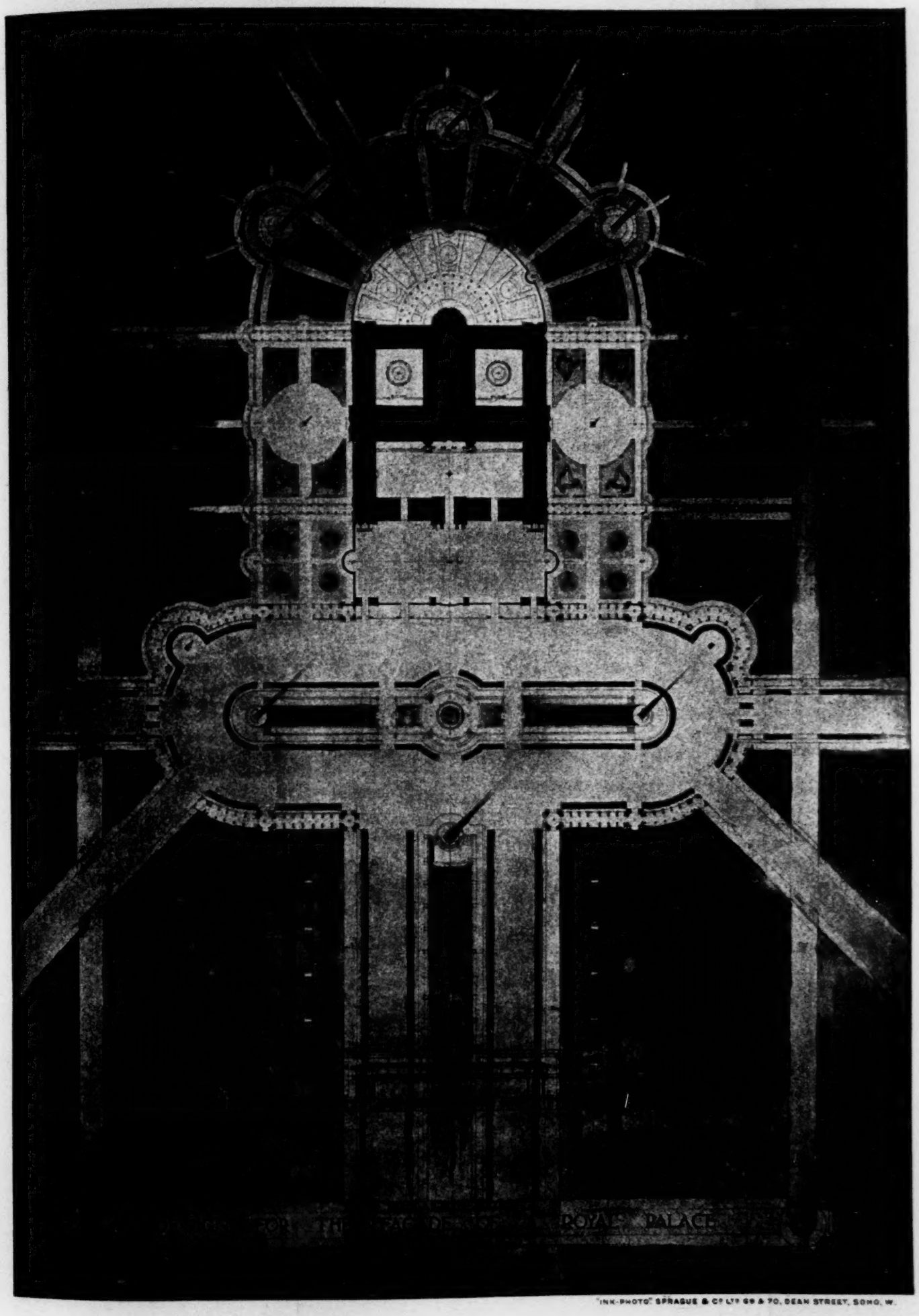

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S.B.Russell, Architect.

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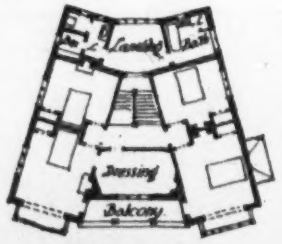

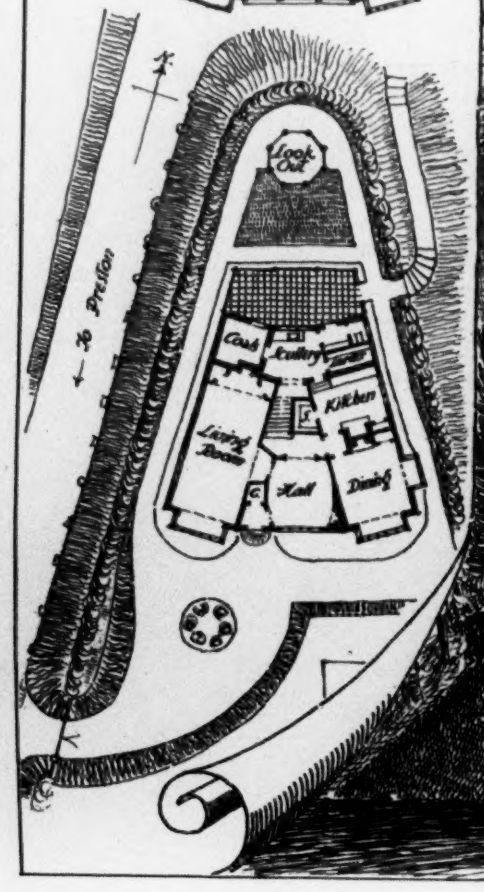

PHOTO-LITHO. SPRAGUE & Co LTD 69 & 70, DEAN STREET, SOHO, W.

HOUSE ON HITCHIN HILL.—Mr. S. B. Russell, F.R.I.B.A., Architect.

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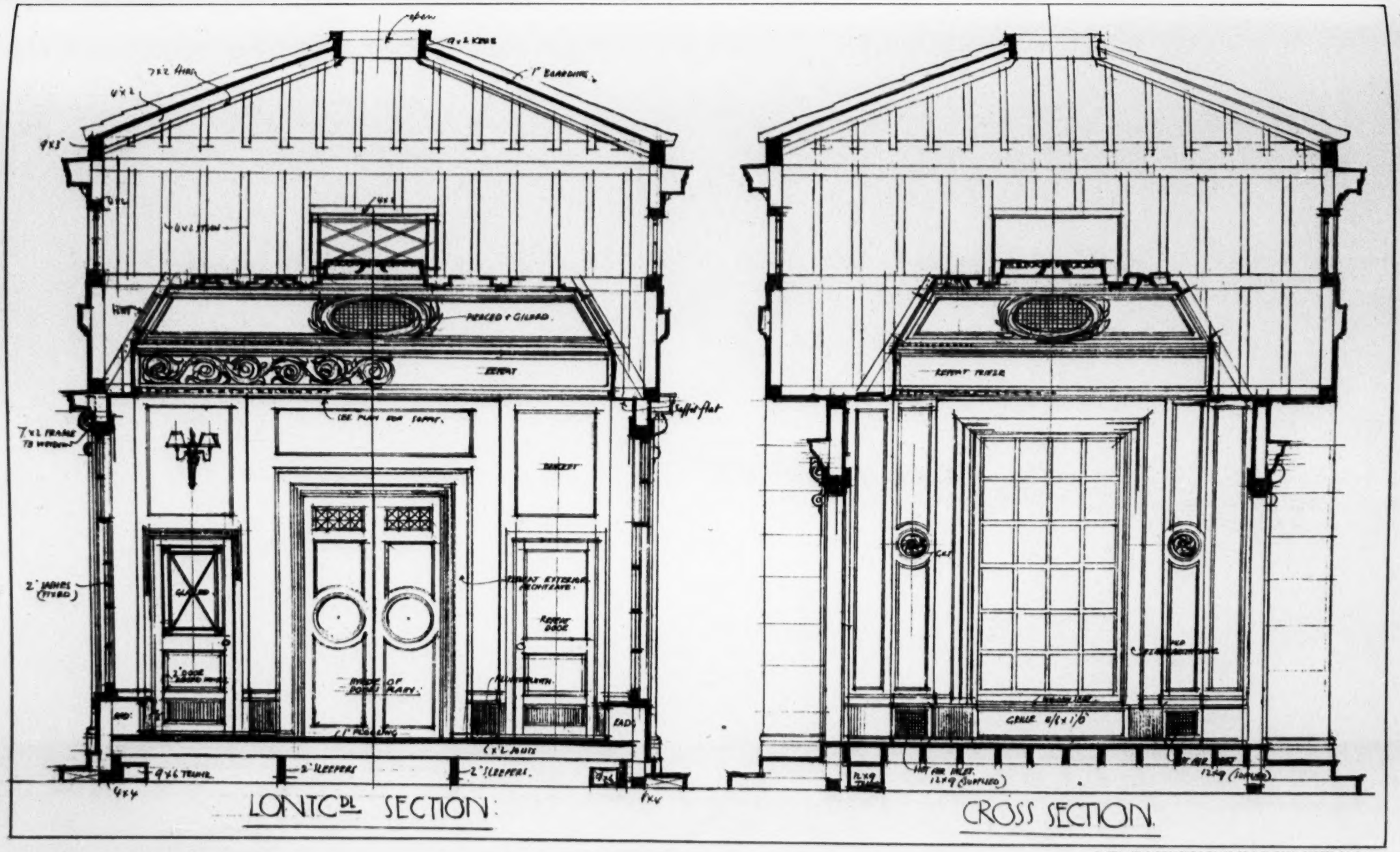

PHOTO-LITHO. SPRAGUE & Co LTD 69 & 70, DEAN STREET, SOHO, W

PROPOSED PAVILION: IDEAL HOMES EXHIBITION.—Mr. Robert Atkinson, A.R.I.B.A., Architect.

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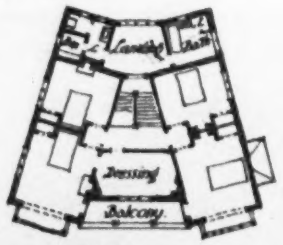


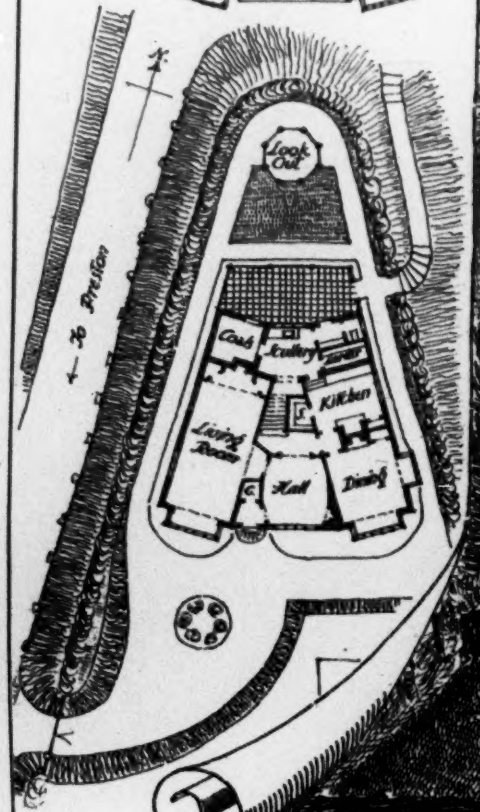
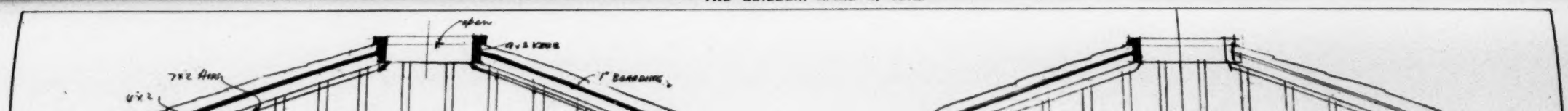
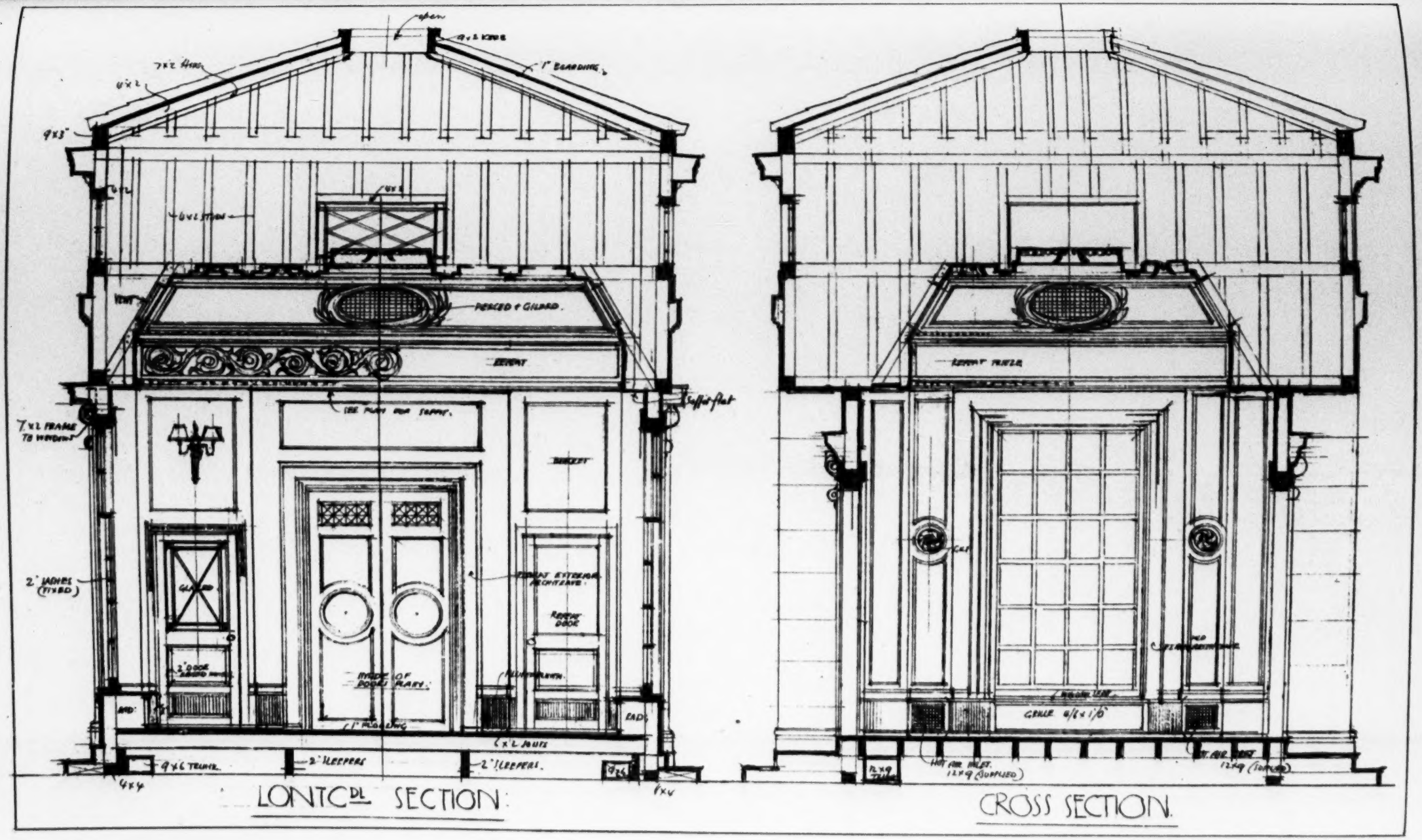


PHOTO-LITHO. SPRAGUE & CO. 179 & 179 & 70, DEAN STREET, SOHO, W.

HOUSE ON HITCHIN HILL.—Mr. S. B. Russell, F.R.I.B.A., Architect.





LONTC^DL SECTION.

CROSS SECTION.

PHOTO-LITHO SPRAGUE & Co. 47 GD & 70, DEAN STREET, SOHO, W.

PROPOSED PAVILION: IDEAL HOMES EXHIBITION.—Mr. Robert Atkinson, A.R.I.B.A., Architect.

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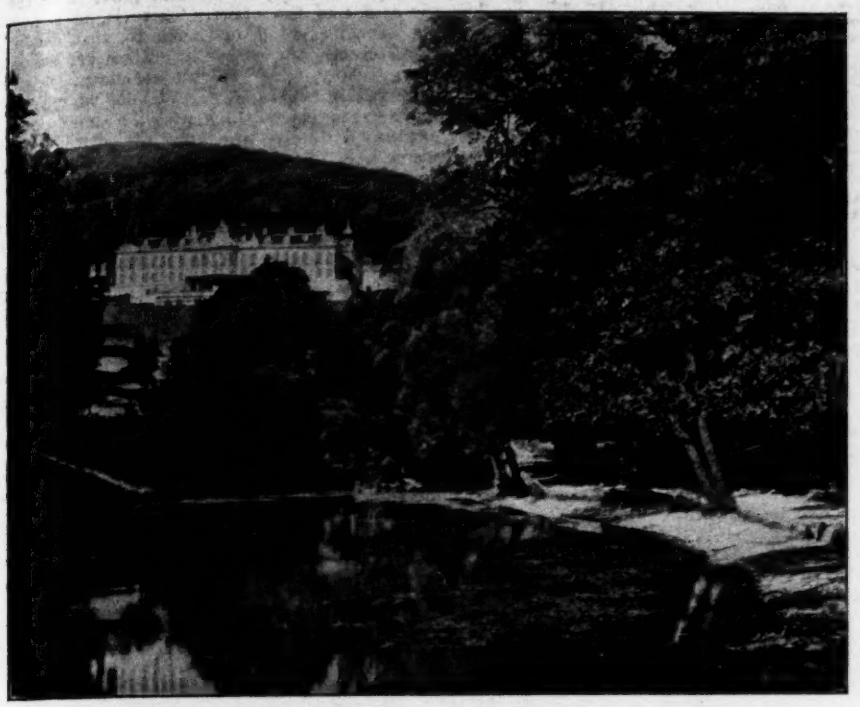
MONTHLY REVIEW *of* CIVIC DESIGN.



The Green Girdle of Vienna: Kobenzl, acquired by the City Corporation.

THE GROWTH OF LONDON.

IF there is one thing more than another that has impressed itself in the minds of all those concerned with the future improvement of London it is its vast and overwhelming size. The difficulties created by size alone may be traced in every aspect of the life of its inhabitants. The drawbacks to health, comfort, pleasure, and good government are obvious, and have been for many years the subject of continual complaint. Yet year by year London continues to increase, and no effort is made to grapple boldly with the problem in any general comprehensive manner.

Of late years we have come face to face with one of the worst of the results of this overgrowth—the appalling congestion of traffic, with its consequent loss of time and money, and its danger to life and limb. So serious has it become that a Royal Commission has reported on it, a special department to deal with it has been created at the Board of Trade, and local authorities and town-planners innumerable are continually giving it attention. The nett result of all this labour and of these endless investigations and deliberations appears to be a tendency to gravitate to the opinion that the traffic cannot be adequately dealt with except by such a drastic widening of old streets or such a wholesale creation of new ones as would be considered impossible for reasons of finance.

In the meanwhile London goes on growing. Although it is perfectly well recognised that this growth is only adding to the difficulty all the time and making the centre of London still more congested from day to day, nothing is done to stop it. We go on grumbling, we go on talking, but nothing is done. We see London extending its tentacles in all directions, and continually adding street to street of mean houses, whose inhabitants will further congest the centre, and yet nothing is done to prevent it. Nothing is even done by way of serious discussion and investigation to find out if anything *can* be done to prevent it.

If the inhabitant of some other sphere where life is arranged on a more reasonable basis were told that a town had grown so large that the congestion in its centre had become intolerable, and its civic government a matter of the greatest complexity, and that it was still growing and getting worse from day to day, he would probably suggest that it might be as well, as a preliminary step, to stop it getting any worse while the remedy was being discussed; or, at any rate, to take immediate steps to discover whether it was possible to do so.

Without in any way disparaging the good results of the labours of the Traffic Commission, it is permissible to suggest that still further benefit might have accrued from the deliberations of a Royal Commission appointed to investigate this question. To discover whether there is any limit to the size of a town, and, if so, what that limit should be; at what point its size becomes a menace to the health and happiness of its inhabitants; and, if a limit is theoretically desirable, how it can best be practically accomplished.

Such a Commission, bearing in mind the Garden City idea and noting the procedure of such cities as Vienna, might possibly come to the conclusion that a limit of size was both possible and desirable, that it might be practically accomplished by the reservation of a belt of open land right round the existing town, and that the application of this principle of a definite limit to the size of London was the first step to be taken. But, however this may be, it seems evident that this question will have to be faced, and that we must definitely make up our minds whether the central area of London is to be arranged to meet the requirements of indefinite expansion or of a definite fixed limit.

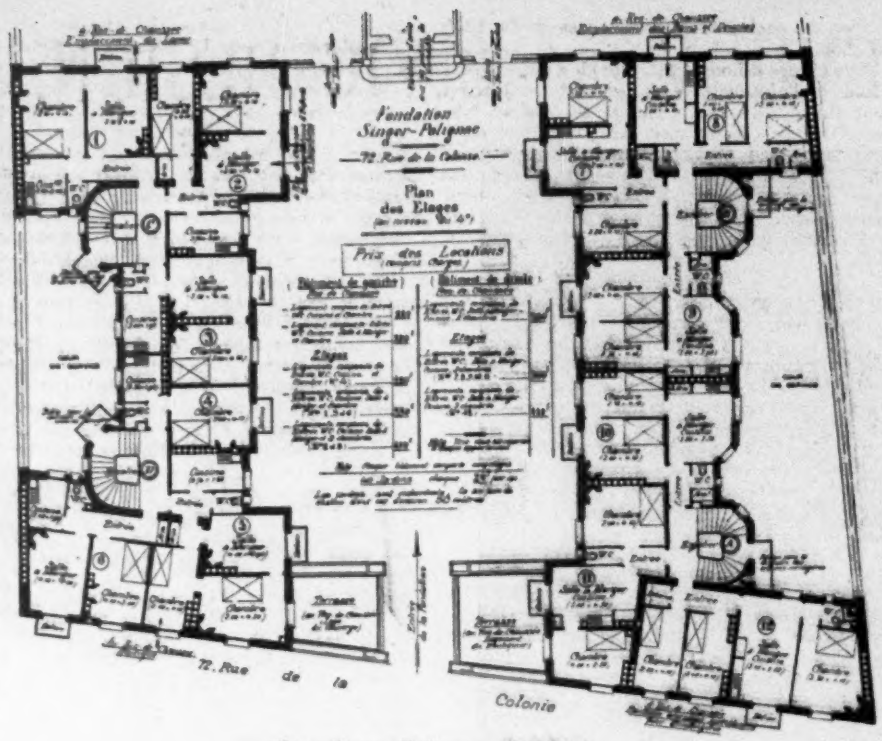
Although ideas have been put forward for a circumferential boulevard which should relieve the centre of much of the through traffic, it has also been pointed out that there is no reason why English towns should copy the continental models founded originally on the modern necessity for fortifications. This is obviously true. It is noticeable in London that its natural expansion does not proceed by rings, but by long arms stretching out along the main radiating roads, leaving large tracks of undeveloped land between them. This has been the case of the North Road through Stamford Hill, on which a more or less continuous line of buildings may have been observed for some years past through Tottenham, Edmonton, and Waltham Cross, while open country was to be observed on either side.

This natural tendency seems to point to a radial, rather than a circular, method of development, with radiating parks and wooded reserves. Such a method appears to set no limit to possible expansion, and to those who think that the size of London is something to be proud of it will no doubt appeal with great force. But those who consider that mere size is not the ultimate aim of City development, and that London is already too big for comfort, health, or convenience, might be disposed to consider that some limit should be placed on future expansion by the creation of a zone of reserved land, as has been done in the case of Vienna. Within this outer zone or circular ring the radial system might be adopted for open spaces, thus producing a combination of both systems.

This journal has more than once called attention to the advisability of securing such remaining open country as still exists on the northern and southern heights, with the ultimate object of acquiring a green girdle round the whole city. Apart from the value of such reserves for their own sake, their acquisition would call attention to the fact that it involved a definite limit to the size of London, and would lead to a definite policy and to a general agreement on a point which must be taken into consideration in formulating any general plan for London.

Although a proper allowance for future development may rightly be considered an essential feature of a practical town plan, yet it might well be maintained that in the case of London this consideration does not apply. Most town-planners would probably agree that

The Green Girdle of Vienna: Kahlenbergerdorf, at the foot of the Leopoldsberg.



The Singer-Polignac Buildings.

M. Georges Voudoyer, Architect.

it is already so big as to be unwieldly, and that the perfect plan would allow for its diminution rather than for its increase. But, in any event, some definite idea on the subject should govern our suggestions for dealing with the congestion of the traffic.

THE HOUSING PROBLEM IN PARIS.

II.—THE FONDATION SINGER-POLIGNAC.

ESTABLISHED for a purpose similar to that of the Fondation Rothschild, the society to which attention is now directed is represented by a large block of dwellings built at the cost of the Princess Edmond de Polignac, who wished to demonstrate the possibility of constructing working-class homes of economical, salubrious, and hygienic character, and at the same time capable of making a reasonable return on the capital expenditure.

The buildings were designed by M. Georges Voudoyer, and are situated in the Rue de la Colonie in the thirteenth arrondissement, the street being in the Maison Blanche quarter of Paris, between the Place d'Italie and the southern ramparts.

The establishment is divided into two parts, as symmetrical as permitted by the shape of the site, separated by a central court laid out as a garden, and the middle portion of the side walls is set back from the building line so as to form two large lateral courts for the admission of light and air. The two blocks are connected at the front by a single-story building, the flat roof of which is arranged as a terrace, the main entrance to the court being in the middle of the connecting structure.

The frontage on the Rue de la Colonie is 44·15 metres, the outer sides of the buildings measuring 33·575 and 27·30 metres respectively. The ground floor is chiefly taken up by shops, rooms for the concierge, bathrooms, laundry, bicycle store, perambulator store, and other domestic offices for general use, the upper floors being devoted entirely to suites of apartments.

The façades are of simple character, and an excellent effect has been obtained by the employment of silico-calcareous bricks of different colours. The plinth of the façades on the street is in Chassignolles stone, and the plinths of the façades on the courts and gardens in Bourgogne brick and cement. Meaningless and costly ornamentation has been entirely avoided, the charm of the composition lying in the colour scheme of the bricks and the manner in which the façades are broken by projections and balconies.

At the back of the two blocks covered yards have been provided for drying clothes and for use in connection with the bathing department, these conveniences being screened by shrubs planted along the railings separating them from the gardens.

A particularly interesting feature of the establishment is represented by the creation of private gardens, let to inhabitants at the low rent of 20 frs. per annum. Forty of these gardens, ranging from 40 to 60 square metres in area, have been laid out on that portion of the site behind the buildings. Paths are laid out along the sides and ends of the area devoted to private gardens, the latter being intersected by wide longitudinal and transverse alleys meeting at a circular space planted with shrubs, and in the centre of which is a standpipe with four taps, from which river water can be drawn for watering purposes. Seats are provided in the alleys, as well as wooden troughs containing sand, in which children can play under the supervision of their parents.

We believe this is the only example of an industrial dwelling in Paris where private gardens have been laid out and placed at the disposal of tenants. Although land is of comparatively low value in the Maison Blanche quarter, the gardens represent a capital outlay of some 40,000 frs., and, after allowing for upkeep, the modest rental charged leaves very little for the proprietors.

The suites of rooms are arranged so that each of them has two outer walls, and consequently can be thoroughly ventilated by through currents of air. Moreover, every suite receives the direct light of the sun during some portion of the day. Each suite has a balcony formed by cantilever projections of the floor joists, and exterior pipes are provided for drainage from sinks, closets, and lavatories, the soil pipes being continued upward, for ventilation purposes, above the roof of the buildings.

The bathing department on the ground floor comprises four bathrooms and five douche bathrooms, the prices charged being 25 centimes for a bath and 10 centimes for a douche. Tenants also have at disposal a well-equipped laundry containing twelve compartments, the charge for each of these being 20 centimes a day, the user providing any fuel required.

On the five upper stories there are sixty suites of rooms, in addition to four suites on the ground floor. The following table shows the nature of the accommodation and the rents payable:—

No. of Suites.	Accommodation.	Annual Rent.	Floor Area.
		frs.	sq. metres.
6	Entrance, kitchen, bedroom, closet	220	29·
1	Entrance, kitchen, dining-room, bedroom, closet	320	—
15	Entrance, kitchen, dining-room, bedroom, closet	330	33·5
27	Entrance, kitchen-dining-room, two bedrooms, closet	360	39·5
15	Entrance, kitchen-dining-room, three bedrooms, closet	410	57·

A cellar is reserved for each tenant.

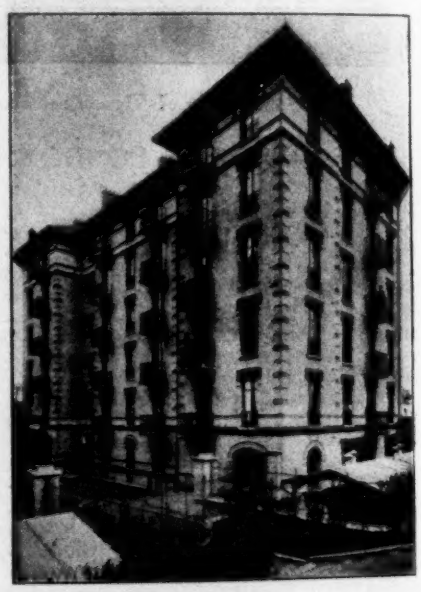
Since the establishment was opened in July, 1911, it has been fully occupied, the average number of inhabitants being 300, including about 160 children. The occupations of the sixty-four tenants are naturally somewhat variable from time to time, but the following list may be regarded as fairly typical:—

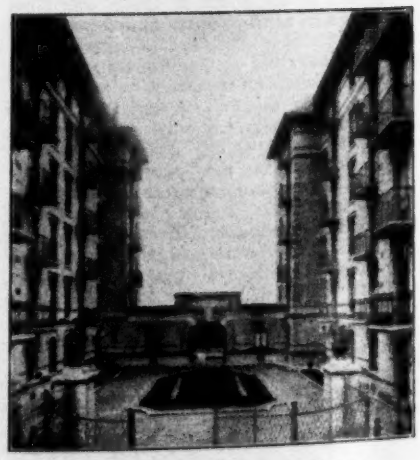
Workmen:	Building trades	13	
	Industries	8	
	Commerce	5	
		—	26
Employees:	Administration	4	
	Police, customs, railway	17	
	Commerce	12	
		—	33
Various:			5

The subjoined data may be of service to those of our readers who are interested in the financial aspects of the housing problem:—

Area covered by buildings	687·00	sq. metres.
,, ,, courts and gardens	3402·41	,,
Total	4089·41	,,
Cost of land, including fees	90,000	frs.
,, buildings, including equipment, laying-out gardens, and fees	510,000	,,
Total	600,000	,,
Gross revenue	27,060	frs.
Deduct cost of management and upkeep	9,000	,,
Net revenue	18,060	,,

From the foregoing figures it will be seen that the return is slightly above 3 per cent. on the capital invested.





The Singer-Polignac Buildings.

M. Georges Voudoyer, Architect.

(From l'*Architecture*.)

TOWN-PLANNING SCHEME FOR SUTTON COLDFIELD.

In no district of England are the possibilities for good of the Town Planning Act more obvious than in such industrial centres as that densely-populated district of the Midlands of which Birmingham may perhaps be considered the headquarters. In all such manufacturing districts where the large towns are in close proximity to one another they tend to absorb the whole of the country between them for commercial purposes, leaving no residential districts where the amenities of life can be enjoyed. So rapid has been the growth of such towns as Birmingham, Coventry, Wolverhampton, and many others in this neighbourhood, and so disastrous has been the effect on a naturally beautiful countryside, that it becomes imperative that any Borough within the radius of their influence that possesses any residential attractions should take immediate steps to preserve them.

Sutton Coldfield, being a town of a purely residential character containing a population of 31,000, and situated on the northern outskirts of Birmingham, and about the same distance from Tamworth in one direction and Walsall in another, has become alive to the necessity of preserving this character, and has formulated a scheme under the Town Planning Act which has secured the approval of the Local Government Board.

The plan we publish shows the district involved. With a total area of 13,030 acres in the borough, some difficulty was experienced in deciding what portion should be included in the scheme. Eventually the area containing 4,800 acres, indicated on the plan with a heavy line, was approved by the Council, and this was shown on Map No. 1, prepared under the regulations. After a meeting of owners and others interested, however, a further area of 1,600 acres was added, taking in the irregular strip to the east of the original area indicated on the plan by the outer heavy line. The scheme thus includes a total area of 6,400 acres. This area is undulating in character, well timbered, and suitable for building purposes. The Borough is well provided with good roads, and the only new one contemplated under the scheme will run from north to south, parallel to the existing main road from Birmingham to Lichfield and Tamworth; but the opportunity will be taken to widen and improve many of the through roads from east to west. Sutton Park being an extensive natural park of 3,080 acres, the only additional open spaces that will be necessary are playing-fields, which will be arranged with the owners of the various estates when they are in course of development. All the land already fully developed has been excluded from the scheme and is shown on the plan by a dark tint.

We hope the scheme now under consideration will show due regard for all the architectural possibilities of the situation.

CIVIC DESIGN NOTES.

Bradford Central Area. An important scheme for replanning part of the central area of Bradford has lately been put forward by the Bradford Corporation in connection with a Bill now before Parliament for powers to construct the Midland Railway through scheme. The plans show the demolition of much congested property of a poor class and the sweeping away of narrow and crooked alleys. It also shows a considerable widening in front of the Midland Station, forming an open place in continuation of Foster-square. This no doubt will be a great improvement, but the scheme as a whole appears to lack a ruling idea, and to have been worked out regardless of architectural considerations.

Garden Village in Wales. The great developments which are now being carried out at Gilfach Goch by the Britannic and Glamorgan Colliery Companies are creating such a demand for labour that the housing question has become an urgent problem. To meet the needs of this growing district the Welsh Garden Cities, Ltd., Cardiff, organised this scheme for a garden village at a total cost of £115,616. Of this sum £75,733 will be raised on loan from the Government at 3½ per cent., repayable in half-yearly instalments over forty years. The land taken was roughly 170 acres. The houses were fifteen to the acre, with 300 super. ft. of garden to each; they would cost from £200 to £250.

The cheapest houses will provide a large living-room and kitchen, with separate bathroom and three bedrooms. The rents charged will range from 6s. to 8s. per week, including rates and taxes and all outgoings. All the houses will be semi-detached. The whole scheme has been designed by Mr. W. Beddoe Rees, under whose supervision the work is being done. It will be managed on the co-partnership system.

Schemes under the Act. The President of the Local Government Board has recently stated in the House of Commons that he has sanctioned the preparation of thirty town-planning schemes by twenty-four local authorities, and that he was considering applications for leave to prepare thirteen other schemes by twelve local authorities. The area involved in these schemes amounted to 60,000 acres. In addition to this the advisability of preparing schemes was being considered by about 100 other local authorities.

Preservation of Thames Scenery. The town-planning scheme put forward by the Richmond Council, in agreement with Twickenham and Ham, is essential for the preservation of the beauty of the river scenery and of the amenities of Kew Gardens. For this latter purpose the plan included land in the district of Heston and Isleworth and also in that of Brentford, but both these Councils opposed the scheme on this account. An agreement was finally arrived at whereby Heston and Isleworth undertook to prepare a plan including all the land on the Middlesex side which Richmond wished to schedule. To this again Brentford objected, but its land will be included in the joint scheme provided the Local Government Board approves.

Deplorable Housing Conditions in Devon. A medical inspector of the Local Government Board has presented a report to the Holsworthy Rural Council as the result of an inquiry into the housing conditions of the district. This report shows the existence of a most deplorable state of affairs. A detailed examination had been made of 170 houses, all of which should really be condemned, but, taking a practical and reasonable standard, there were eighty-eight of them which were unfit for human habitation. In addition to the bad condition of the dwellings the overcrowding was terrible. The Chairman of the Council expressed the desire to improve these conditions, but pointed out monetary difficulties. Eventually the discussion on the report was adjourned. It is to be hoped that immediate steps will be taken to remedy conditions which are a disgrace to civilisation.

Housing Scheme Disapproved. We regret to see that the Corporation of Merthyr has put forward a town-planning or housing scheme which the Local Government Board does not see its way to approve. This is particularly to be regretted, as the insanitary condition of much of the present Dowlais housing accommodation is notorious and calls for prompt renewal. The Board appears to have taken the view that, owing to the contours and levels of the land selected, it was not suitable for the erection of cheap dwellings which could be let at a low figure, and that too much land appeared to have been acquired. The Board, however, is satisfied that there is a demand for better housing accommodation, and has requested the Merthyr Council to consider whether a more suitable and less expensive site could not be obtained, or whether a small part only of the present site could be acquired for housing purposes.

Sutton Coldfield Town-Planning Scheme.

THE BUILDING TRADE.

THE FINANCE ACT AND THE BUILDING TRADE.

SINCE reference was last made in these columns to the controversy arising out of the Lumsden case we have received a copy of a memorial which has recently been presented to the Chancellor of the Exchequer by the Auctioneers' and Estate Agents' Institute. In this memorial the attitude of the building trade on this question is set out in clear and straightforward language, and for the purpose of considering exactly how the matter now stands we may usefully refer to it here as correctly setting out the nature of the grievance felt by builders.

The memorialists state that they have always believed, and now contend, that the intention of the Finance Act, 1910, was to tax land and to tax land only with increment value duty in cases where there was a real increase in value on "occasion." They express the opinion that the decision of the court in the Lumsden case is so much at variance with what was intended by the Act, and anticipated by the public, that it has caused a feeling of consternation throughout the country, and has already proved a further check upon builders' enterprise. The memorialists then ask for such an amendment of the Act as will make it clear that an owner's profits arising out of his skill, enterprise, and foresight in connection with buildings are quite distinct from increase in site value, and that only when it is found on "occasion" that the land itself has increased in value shall increment value duty be payable.

That is a short statement of the builders' position. It is, however, extremely desirable to ascertain exactly what answer the Government now put forward. Their attitude has now been fairly well defined not only in recent debates in the House of Commons, but by a letter (published in the *Builder* last week) which has recently been addressed by Mr. Lloyd George to a correspondent who had asked for information on the question.

Below will be found a reply by Mr. Pretyman to this letter, and also a note on Mr. Lloyd George's statement as to the allowance of profit made in the Lumsden case. For the purpose of a review of the whole position a further reference to this letter is necessary, and we hope also to indicate what is, in our view, the best policy for builders to adopt in order to get the relief they require.

Mr. Lloyd George denied that the effect of the procedure of the Inland Revenue Department as endorsed by the Lumsden judgment was to charge a duty of 20 per cent. on all builders' profits. To pause there for a moment, we do not know whether, as Mr. Pretyman suggests, Mr. Lloyd George misquoted his correspondent, but he certainly might have gone further than this. He might have replied with truth that no such objection is urged by the building trade. Their contention is not that all profits of builders are subjected to this duty; it is rather that it is being charged in such a way that it is impossible to say whether or not any particular transaction is going to be brought within the four corners of the "fortuitous windfall" theory.

Mr. Lloyd George then discussed the Lumsden case, pointing out to his correspondent that the circumstances were exceptional; and he justified the charge of increment duty on £125 on the ground that this sum represented "an excess of price over value which the owner could not reasonably have expected to obtain, and which was a fortuitous windfall coming to Mr. Lumsden, not through his skill as a builder, but as a chance gain incidental to the monopoly of land ownership."

It will thus be seen that the Government's position is that it is only in abnormal cases that increment duty is chargeable on builders' profits. It would appear that the Government mean by an abnormal case a case in which the builder, as the result of a sale, has received something which, though not due to an increase in the site value of the premises sold, is, nevertheless, incidental to the monopoly of land ownership.

We confess to some considerable difficulty in appreciating the point of this distinction. If the "something" which is to be taxed is really incidental to the "monopoly of land ownership," the only logical and consistent course would be to classify it as an increase in site value, and yet it is admitted that in this class of case no increase on site value has taken place. As a matter of fact, in the Lumsden case the taxable part of the price obtained was incidental to nothing but the character of the building erected, and it is impossible to deny that the character of the building erected was incidental to the industry, skill, and foresight of the builder himself.

In substance Mr. Lloyd George's reply seems to amount to this—that a taxable windfall is a taxable windfall, and no builder can be hurt by contributing to the Exchequer 20 per cent. of something which he never contemplated getting as a result of his industry.

Taking this as a statement of the Government's attitude, and without offering any further criticisms on the ground of logic or consistency, we ask the Government this question: Is it worth while to continue to press upon the building trade this particular application of the increment tax, having regard to the fact that the benefit to the Exchequer is, and always must be, entirely out of proportion to the doubt and disturbance which it causes to builders? The fact—and it may well be the fact—that it is only to apply in abnormal cases is a sufficient indication that the Exchequer will get little out of it. But that is no measure whatsoever of the amount of disturbance caused to the trade. It cannot quiet the apprehensions of anyone who is engaged in building enterprises to know that the chances are, say, twenty to one against his being included within the ranks of the "fortuitous windfallers." On the contrary, his fears remain by reason of the fact that it is a chance, a new and uncertain incident to which the trade has become liable. He knows that the profit arising out of a particular transaction may be limited by an arbitrary and artificial rule of the Somerset House thumb.

This, therefore, is the position. On the one hand builders find themselves subjected under the terms of the Finance Act to a tax which they never suspected was part of the scheme of the Act; a tax which cannot, except by a process of very special pleading, be made to square with any theory or principle upon which the land value duties are based; a tax which is both arbitrary in its application and uncertain in its incidence. On the other hand, we find the Government justifying the tax on the ground (*a*) that it falls only upon profits that are unexpected and abnormal and therefore few in number; (*b*) that it always was included within the scope of increment duty.

Under these circumstances what is the best course for the trade to adopt in order to obtain the concession they demand? The Government evidently do not appreciate the fact that builders cannot be appeased by a mere statement that "windfall" cases do not often arise; they do not understand that it is not known but unknown liabilities that do most to upset the stability of any trade. Builders would do well, in our opinion, to bring this aspect of their case before the Government and to show Mr. Lloyd George that a tax on profits which may be imposed or not imposed according to the judgment of a revenue official upon the facts of each particular case is extremely mischievous; that the amount of profit actually diverted from the builder to the Exchequer is no criterion of the harm done. Infinite damage may be done by a sword of Damocles, though it never falls.

Builders should also endeavour to convince the Government that their objection to the "windfall" theory is not an insidious political movement. It has nothing whatever to do with politics so far as the trade itself is concerned. It is no part of any political movement for the repeal of all the land value duties. It is a genuine and well-founded grievance, and it is part of the grievance that the Government are seeking to impose a burden which is altogether outside the scope of the land value duties as foreshadowed by the Government and understood by builders and the general public.

THE LUMSDEN CASE.

A letter addressed by Mr. Lloyd George to Mr. J. W. Tranter, of Bath, and published in our last issue, once again draws attention to the Lumsden case. In this letter the Chancellor of the Exchequer states, "It is the practice of the Department in arriving at the site value on the occasion of a sale of a composite property by a builder to deduct the whole of the value attributable to the operations of the builder. This will in normal cases include the whole of the profit of the builder who presumably builds houses not out of charity, but because he expects to create a value which when realised will afford him a profit over and above the cost of production." This statement so far is unexceptionable, but the letter proceeds in speaking of Mr. Lumsden to deal with his case as follows:—"He realised a price considerably in excess of the combined market value of the land and building. That market value included the builder's profit, which he had created by his experience and skill, and in estimating the increment value a full and even generous allowance was made for the value attributable to the building including the builder's profit, which accordingly was entirely eliminated from the charge of duty."

The statement that a profit was allowed to Mr. Lumsden has been repeated over and over again, but, as we pointed out in our article of February 7, the published figures do not show what the amount is that was allowed as a "generous" profit. The property was valued for the provisional valuation as at April 30, 1909, on February 9, 1911, nearly six months after the "occasion" had arisen by the sale on August 23, 1910. One thing is quite clear, that whatever profit was allowed was allowed on the provisional valuation and not on the occasion. On the provisional valuation the gross value was taken as £658, and £430 was deducted from this sum, leaving full site value £228. On the occasion the purchase price, £750, was substituted for the gross value and the same deductions were made as on the provisional valuation. Thus whatever sum was allowed as representing profit out of the £430 deducted on the provisional valuation only the same sum was allowed on the occasion. This no doubt was due to the fact that there was an admission in the case that there had been no variation in the full site value between April 30, 1909, and the occasion, August 23, 1910. The result, however, is most unsatisfactory, as the estimated allowance for profit, whatever that was, remained unaffected by the actual price obtained, and the whole difference between the estimated value and the price obtained was subjected to increment value duty. The substitution of estimates of value based upon wholly inadequate surveys, or rather examinations of properties, for prices obtained in the market can never be satisfactory, nor can the obvious effects of a legal decision be modified or explained away by Ministers, and we are glad to see that, in answer to a question put in the House on March 26, Mr. Lloyd George stated that the Government were considering whether the Act required amendment in order that the expressed intention of the Government when it was introduced might be carried out under its provisions.

Mr. Pretyman, M.P., President of the Land Union, writes as follows with reference to the letter from Mr. Lloyd George on the Lumsden case and the taxation of builders' profits, published last week:—

"In this letter the Chancellor of the Exchequer states that 'there is no foundation for the statement that the effect of the procedure of the Inland Revenue Department as endorsed by the judgment of the High Court in the case of the Commissioners of Inland Revenue *v.* Lumsden is to charge a duty of 20 per cent. on all builders' profits.' So far as I am aware, no such statement as this has ever been made, and certainly not by the Land Union, which

is responsible for this test case. The Chancellor of the Exchequer has as usual misquoted his opponents in order to make a case against them. He has in this case done so by inserting the word 'all.' It is quite true that no claim has been made to charge increment duty on all builders' profits. That is not our complaint. It is that the Revenue Department claim the right to dissect a builder's profits and to arbitrarily adjudicate as to what part is genuine builder's profit and what part is fortuitous windfall. A third classification has since been added in the Scotch Courts by a judgment identifying part of a profit as sentimental and not taxable. Builders and small house-owners are therefore faced with a claim on that portion of their profits which the Valuation Department claim to be 'fortuitous.' In the Richmond case, in the Lindsell case, and in many other cases the duty is claimed upon the whole profit, or even on a loss, and every property owner who disputes such a charge can only do so in a Court of Law at a cost far exceeding the duty assessed against him. These claims are made in cases where it is admitted that there has been no rise whatever in the value of the bare land, in spite of the definite pledge given by the Chancellor of the Exchequer that increment value duty would not be payable when the value of the bare land has not increased over the corresponding value on April 30, 1909.

"The Chancellor of the Exchequer has been three times challenged within the last few weeks in the House of Commons to reconcile this pledge with the present action of his Department. On two of these occasions he has found it convenient to be absent, and on the third occasion he left his defence in Mr. Masterman's hands. He apparently finds it preferable to write adroit letters to correspondents than to defend himself in the House of Commons."

THE USE OF WHITE-LEAD IN PAINTING.

At a meeting of the Royal Society of Arts on March 12, Mr. Noël Heaton, B.Sc., F.C.S., read a paper on "The Use of White-Lead in Painting," in the course of which he said:—

"For many years this question of the use of white-lead in painting has been the basis of controversy between those who claim that its employment is unnecessary, and who clamour for its abolition, and those who, like myself, consider that it possesses qualities which render it of exceptional service to the painter, and which far outweigh the disadvantages attendant upon its use.

I am led more particularly to present this subject from the point of view of a believer in white-lead, because recent investigations have served somewhat to modify our views on the technology of white-lead, and because various statements have been made broadcast as to the dangers attendant upon its use—statements which are designed and calculated to create a prejudice against it which is not justified by the facts.

In the year 1910 58,000 tons of white-lead were manufactured in this country, and in addition 14,500 tons were imported from abroad. The production of this quantity gave regular employment to some 2,500 men, receiving over £158,000 in wages, and the total capital invested in the industry at that time was over one and a third million pounds sterling.

Now, one cannot deny that white-lead, in common with all compounds of lead—and, incidentally, with the vast majority of the salts of other metals, a fact which is very often overlooked—has a deleterious action when accumulated in the human system. With the growth of democracy and the passing of the Factory Acts attention has been gradually focussed on the evils attributed rightly or wrongly to the use of white-lead, with the result that in recent years there has sprung up an agitation for the entire prohibition of its use in painting—an agitation which virtually amounts to a demand that the manufacture of white-lead in this country shall be abandoned.

Prejudice in Favour of White-Lead.

What will be the position of the painter and decorator, and more particularly of his client, if he is prohibited from using white-lead. It is pretty evident that it must have exceptional value as a painter's material, otherwise we should not find it used to such an enormous extent at the present time, when for fifty years past or more other white pigments have been available, and after all the resources of science have been devoted to the finding of a material to take its place.

We are asked to believe that this clinging to the use of white-lead is simply and solely due to prejudice, to the refusal of the painter to make a change, on the grounds that what was good enough for his father is good enough for him. I am willing to believe that prejudice may for a time hamper the introduction of a new idea amongst the most conservative members of an industry, but I am not willing to believe, against the evidence of experience, that even the British decorator, maligned as he is on all sides, is so blind to his own interests as to persist year after year in using any material which he can replace with advantage by improved products. There are sound technical reasons at the back of this prejudice in favour of white-lead. The substances that have at one time or another been introduced with a view to their taking the place of white-lead are numerous, but one after another they have been tried and found wanting, and as our knowledge of the problems to be solved increases it becomes more and more difficult to believe that an efficient substitute will ever be discovered.

Substitutes, and Qualities of White-Lead.

In fact, for one reason or another, the only substances which come within the sphere of practical politics as substitutes are oxide of zinc and a compound of sulphide of zinc and barium sulphate, generally known as lithopone.

Zinc oxide is prepared by volatilising metallic zinc in presence of air, or direct from the ore by a process of sublimation. The latter is cheaper, but can only be employed with certain ores of suitable composition, and it yields a rather less pure product. Lithopone is prepared by mixing together solutions of barium sulphide and zinc sulphate—when double decomposition ensues with the formation of a precipitate containing barium sulphate and zinc sulphide—which is subsequently converted into the pigment by a process of calcination. Both of these substances have certain valuable properties as pigments; but the evidence, to my thinking, is overwhelming that white-lead has qualities as a pigment which place it in a different category to either of them. It has, in fact, a peculiar combination of qualities, due partly to its chemical composition and partly to its physical condition, which render it of peculiar value to the painter and justify the prejudice in favour of its use. In the first place, it has a very high degree of opacity, enabling the painter readily to obliterate the surface painted and produce a dense white effect with a minimum of material. This is due to a combination of physical properties. It is due in the first place to the fineness of its particles, for it is well known that even a perfectly transparent substance like glass becomes an opaque white powder when finely ground, and whiter and more opaque the more finely it is divided, owing to the reflection and scattering of the light from the surface of its minute particles. But if this were the only reason for its opacity, it would be readily matched in this respect even by such a substance as chalk, which can be precipitated in an equally fine state of division.

But the opacity of a colourless substance does not solely depend on the size of its particles; it depends also to a large extent on the difference between the density of the particles and that of the surrounding medium. When there is a great difference of density between the two, light is unable to penetrate any thickness of the powder owing to the amount of refraction and consequent internal reflection that takes place in passing through each tiny particle. Chalk is pretty well as opaque as white-lead when used as whitewash, because the particles are exposed practically dry, and the difference between the density of air and almost any solid substance is enormous. But if one mixes chalk with oil the opacity practically disappears because there is very little difference in density between the two substances. White-lead, however, retains its opacity under such conditions, because the difference between its density and that of the oil is still very great.

In order that any pigment may have as great an opacity as white-lead it must not only be as fine, but it must also be as dense. It is here that zinc oxide fails—in neither respect is it equal to white-lead; as regards fineness, it is possible that this difficulty could be overcome, but as regards density it is not possible. The density of a substance is largely a function of the atomic weight of its constituent elements and by no possibility could zinc oxide be prepared of equal density to white-lead; its opacity or body, therefore, must inevitably be inferior. With lithopone, however, the case is different; it is extremely fine, and, owing to the large content of barium, its density approximates to that of white-lead, so that in respect of opacity it is a fair substitute.

More important than the opacity, however, are the properties of white-lead dependent on its chemical composition. In common with all lead compounds, it has that mysterious effect on oils of increasing their oxygen absorption, and thus forming paints which "dry" in a more satisfactory manner than those prepared with purely inert material. This, however, is not so important as the fact that it is a basic compound, containing two molecules of normal carbonate of lead in combination with one molecule of hydroxide. Owing to this peculiar composition, it has the power of combining to a certain extent with the oil in which it is ground in the preparation of paint. On account of the formation of this compound, the paint produced has a peculiar smooth-working quality in the brush which is greatly appreciated by practical painters, as it enables them to produce a smooth and uniform coat with ease.

The most important point, however, is that the formation of this compound of the lead with the oil influences materially the nature of the film formed by the paint on drying, causing it to be more elastic, more water-shedding, and more resistant to decay than it would be otherwise. This is really the most valuable feature of white-lead, that it influences materially the durability of paint: the evidence, according to my experience, is overwhelming as to the value of white-lead in this respect, so much so that I consider it a *sine qâ non* to use white-lead paints for all purposes where durability is of importance.

It is generally conceded that lithopone in particular is absolutely useless for exterior painting; not only has it no protective action on the film, but the pigment itself is liable to oxidation with the production of soluble zinc sulphate, and paint prepared with it disintegrates rapidly; moreover, it has a peculiar and distressing property of going off colour in a very spasmodic manner, becoming grey and in some cases almost black.

Zinc oxide, whilst free from this latter objection, also forms paints which disintegrate on exposure very much more rapidly than those made with white-lead. It is true that zinc has one advantage over white-lead in that it is not discoloured by sulphuretted hydrogen, not because it is not attacked, as some people think, but because it is converted into the white sulphide which forms the basis of lithopone, instead of a black sulphide, as in the case of lead. The amount of sulphuretted hydrogen in the air of our towns is, however, negligible as compared with the amount of sulphuric acid, especially in view of the increasing tendency to employ coal-gas which is entirely free from the former, but contains on the average 320 grains of sulphur (equal to 2½ oz. of sulphuric acid) in every 1,000 cub. ft., and zinc oxide is far more readily attacked by this than white lead, being converted into the freely soluble sulphate of zinc.

For inside work, where durability is not of so much moment, zinc pigments are at the present time largely used insead of lead, which tends to show that there is nothing in the way of prejudice against their use on the part of the painter, but it will readily be conceded that it is the protective effect of outside painting which is of paramount importance, more perhaps in this country than in any other on account of the rapid deterioration of unprotected wood and metal work.

Technical Work to be Done.

Whilst mentioning the question of the durability of paint, I would like, incidentally, to refer to the fact that there is a great deal of technical work yet to be done on this subject which has, in fact, never been thoroughly investigated on a practical scale, although various attempts have been made, notably by the National Association of Master Painters. In the United States the subject is being very thoroughly investigated at the present time with very valuable results, and I am hoping that before very long we shall see the formation of an impartial and authoritative committee representing all interests, to carry out an investigation on similarly practical lines. Time will not permit me to say any

more on this subject in the present paper, much as I am tempted to do so, but I am encouraged to think that the matter will be adequately dealt with in the near future, as one paint manufacturer has generously offered to place a substantial sum at the disposal of such a committee with a view to a full and impartial investigation. The value of such a research is beyond question; it will replace opinion and discussion by definite and reliable facts.

You will see, therefore, that on technical grounds one is faced with a serious risk if one contemplates prohibiting the use of white-lead in the present state of our knowledge. The risk—or, to my thinking, the certainty—of reducing the protective value of paint for external structures, and consequently the cost of upkeep of all the vast mass of buildings involved in our modern system of civilisation against the ravages of our climate.

Decline in Cases of Lead-Poisoning.

I will admit that if the position were as serious as we are asked to believe, if it were a fact that everyone who handles white-lead inevitably contracts lead-poisoning; if it were a fact that its use constitutes "an appalling and increasing danger," then undoubtedly these difficulties should be faced and overcome at all costs. But is it a fact? Is it really necessary or even desirable to prohibit the use of white-lead in painting? I venture to assert that in the light of recent inquiry this is far from being the case, and that in the face of the technical and economic difficulties involved such a step would entail disadvantages and hardships in the trade far in excess of any benefit that might be derived.

As more experience in diagnosis has been gained, and in response to the application of the rules for care and cleanliness and the instruction of the workmen, there has been a steady decline year by year in the number of cases reported.

It comes to this that at the present time the whole of the cases of plumbism reported in an exceptionally trying year amounted to 235 in the whole industry, that is, white-lead manufacturers, red-lead makers, paint manufacturers, and painters and paint-users of every description, including coach-painters, a total body of workers, in fact, numbering some hundreds of thousands, and out of this number 82 per cent. were slight, leaving only some forty cases which were at all serious. Does this provide justification for the statement that has been distributed broadcast to the effect that "every year white-lead sends hundreds of workmen to their death and maims thousands"? As a matter of fact, careful examination of the official returns as regards sickness and mortality in different industries shows that at the present time the mean death-rate for the trade of plumber, painter and glazier compares favourably with the average for all males in industrial employment.

What has been Done Abroad.

I venture to suggest that manufacturers and employers are not altogether the callous opportunists they are represented to be in some quarters, and that they would welcome and co-operate with any reasonable suggestions for the improvement of the welfare of their employees in this connection. By way of arriving at such suggestions for the elimination of lead-poisoning let us glance for a moment at what has been done in other countries where the problem has been tackled. I will not detain you with the lengthy details of the various inquiries which are available for reference, but the following is an epitome of the results:—

REGULATIONS FOR THE USE OF WHITE-LEAD IN DIFFERENT COUNTRIES.

1. Prohibition of the dry rubbing-down of paint	Austria	Germany	Belgium	Switzerland
2. Provision for the removal of dust in factories	Austria	Germany	—	—
3. Prohibition of the use of white-lead except ground in oil	—	—	Belgium	Switzerland
4. Provision of washing appliances, overalls, etc.	Austria	Germany	Belgium	Switzerland
5. Periodical medical inspection and registration of employees	Austria	Germany	Belgium	—
6. Regulations against eating, drinking, and smoking at work	Austria	Germany	—	—
7. Provision of instruction to workmen as to precautions to be taken	Austria	Germany	—	Switzerland
8. Exclusion of workers showing susceptibility or predisposition	—	—	Belgium	—
9. Prohibition of the use of white-lead for inside work	Austria	—	—	Switzerland
10. Notification of the composition of paints	Austria	—	—	—

The total prohibition of white-lead was tried in Switzerland in 1904, but subsequently abandoned as impracticable. In France a law for the total prohibition has been passed to come into effect in 1915. The subject has also been considered in Holland, but no regulations have yet been issued. It is recognised, however, that prohibition is impracticable.

In Germany the use of substitutes for white-lead is prohibited in Government works.

It is generally admitted that the first of these provisions is of the utmost importance, and one that might well be adopted in this country. It is a provision that applies rather to those engaged in painting and decorating, and more particularly coach-painting, than to those employed in the manufacture of white-lead and paints.

Sand-Papering and Dust.

There is no doubt that the practice of sand-papering down paint is peculiarly dangerous; the amount of lead thus thrown into the air is enormous, and the natural method of performing the operation results in this dust being produced on a level with and in close proximity to the face, so that it is inevitably inhaled. The abnormal incidence of poisoning amongst coach-painters, which does not show the steady decline noticeable in other industries, is generally attributed to this cause.

The provision against dust is a corollary to the last, and is of great importance, more particularly in factories. In the actual manufacture of white-lead, dust can be largely eliminated by keeping the product always in a moist condition, and as a matter of fact in a well-equipped modern works the incidence of poisoning is very small indeed, notwithstanding the enormous quantities handled. The modern system of converting the pulp-lead as it comes moist from the filter presses into paste by pugging it with oil is of great assistance in eliminating altogether the necessity for the pigment ever attaining the state of dry powder, and the modern methods of manufacture in which the cycle of operations is carried through automatically without the necessity of handling incidental to the stack process also offers advantages in this respect. In paint factories a great deal can be done to eliminate risk by the installation of efficient exhaust ventilation, and study on the part of those responsible for the design and operation of the plant to reduce the amount of handling of dry materials to a minimum.

The Use of Dry White-Lead.

I am inclined to question the desirability of prohibiting the use of dry white-lead altogether; there is something to be said for it, and if white-lead went always direct from the maker to the painter it would certainly be a great point, for undoubtedly the mixing of small quantities of dry lead into paint in the crude and primitive manner generally adopted by the painter is a fruitful source of trouble. But one has to consider the paint manufacturer, and in practice I certainly have found it inconvenient on technical grounds to use ground white-lead in the preparation of paints on a factory scale. As far as the painter is concerned, I cannot help thinking that the system which has developed extensively in recent years of using paints prepared ready for use has immense advantages in this respect, in that all the handling of dry powder is done for him in a well-equipped factory, where every precaution can be observed. Apart from the fact that such paints are far more efficient than he can make them himself, he only handles it in a form in which it is practically innocuous, except with gross carelessness.

Care and Cleanliness and Education.

The provisions for care and cleanliness, and medical inspection and general discipline are, I am sure, heartily endorsed by every manufacturer and employer who is alive to his own interests. Apart altogether from any question of poisoning, such matters make for efficiency and promote the welfare of the firm. In these days of strenuous competition no establishment that neglects to promote the efficiency of its staff by organisation and discipline can hope to succeed, nor does it deserve to do so.

The same may be said of the education of the worker as to the precautions to be observed, which cannot be too strongly approved. The man who is too ignorant to take care of himself is certainly too ignorant to take care of his job. The man of common sense is the man that every employer is on the look out for and willing to pay for, and there is no doubt that technical knowledge is one of the greatest stimulants to common sense.

There is no doubt also that the weeding-out of those who show abnormal susceptibility is a necessity, whilst the man with predisposing causes, which generally means chronic alcoholism, is unreliable, and a man to be avoided wherever possible in all industries.

As regards the remaining two provisions which have been adopted in Austria, personally I think they are objectionable for several reasons, but chiefly for the reason that they are difficult to control. I suggest that the essence of any such regulations should be that they can be readily and strictly enforced.

As regards prohibiting the use of lead for inside work, for instance, it is true that in many cases white-lead can be replaced by substitutes for inside work, but it is impossible to draw a hard-and-fast line as to where durability is and is not of importance; in such cases, as greenhouses, for instance, the conditions are often as trying inside as out, and in such cases the prohibition of white-lead would result in lack of efficiency, whilst very little would be gained in the way of diminished risk."

MOTOR-WAGGON USED AS A HOISTING ENGINE.

DURING the erection of a steel chimney-shaft, 80 ft. high, at Cleveland, U.S.A., a 3-ton motor-waggon was successfully brought into service as a hoisting engine. The chimney-shaft weighed 2 tons, and had to be placed on a masonry foundation, the top of which was 12 ft. above ground level. For the purpose of facilitating hoisting operations a guyed mast was erected alongside the base of the chimney, a cable with one end secured to the steel shaft was passed through a pulley at the head of the mast, through a second pulley near the ground, and thence to the motor-waggon. This vehicle was then backed slowly until the shaft had been hoisted to the required height and adjusted in position. The shaft was lowered by moving the waggon forward. The whole operation was performed in a few minutes, and it is probable that this ingenious application of a motor-waggon may suggest to our readers similarly convenient and economical methods of utilising vehicles of the same class in the execution of building and other contracts.

SEASONING TIMBER.

A VERY simple method of seasoning timber, given by a French contemporary, consists in saturating it with linseed or other drying oil and exposing it for a sufficient time to moderate heat. After cooling the timber is found to be smooth, glossy, and hard. It is also stated that by removing the bark when the sap is in full flow, some months before trees are felled, the strength of the timber is augmented by about 15 per cent. Another method of treating timber is to strip the trunk down to the sapwood immediately the tree has been felled, cutting it into planks, soaking these for six days in lime-water, and afterwards drying in the open air, sheltered from the sun. Timber seasoned in this manner is said to suffer far less from the effects of atmospheric conditions than timber dealt with in the ordinary way.

BUILDING TRADE WAGES, DERBY.

About 200 painters and paperhangers at Derby took advantage of the busy spring-cleaning season on the 31st ult. to strike for a penny an hour more pay. Some of the employers are favourable, and the men are willing to go to arbitration, so that an early termination of the strike is expected. Conferences between the builders in the Burnley, Nelson, and Colne districts, and the stonemasons and labourers, resulted in agreements giving the stonemasons another ½d. an hour, with better overtime rates, and the labourers an increase from 6d. to 6½d. an hour. The master plasterers in the same districts have agreed to raise wages by ½d. an hour.—*Manchester Guardian.*

"IRONITE" PATENT WATER-PROOFING.

We have received some interesting information in reference to a metallic waterproofing for cement, brick, stone, and other porous substances, which is known as "Ironite." The material is fine metallic powder, being strictly mineral, and having no oil, paraffin, asphalt, or other similar substance in it. In application it is mixed with water to about the consistency of an ordinary whitewash, and well rubbed into the desired surface with a brush. The water carries the particles into any porous object, and into any cavity that moisture will penetrate, and its value as a waterproofing material is due to the fact that, when introduced into the voids of concrete, brickwork, etc., the "Ironite" particles oxidise, expand, and form both a mechanical and chemical union with the concrete, and become an inseparable part of it. It cannot be removed except by strong mechanical force such as hammer and chisel, and then only by taking a part of the concrete with it.

The material can be applied equally well, we understand, to a wet or dry surface, and to a structure in course of erection or to one many years old. It can be applied either to the inside or outside surface, and against any degree of water pressure. The material may also be used by mixing with Portland cement in a dry state before the concrete is made, and, when so used, we are informed, great tensile strength and crush-resisting properties are obtained. It is especially valuable in this connection for use in making concrete beams, bridges, etc., where a heavy load must be carried. "Ironite" forms a good bond with old as well as new surfaces, and it is useful in this respect for bonding new work to old, and not only for laying a floor, but for repairing old floors which have become damaged in places.

The use of "Ironite" flooring overcomes, it is stated, the porous nature of cement and concrete, greatly increases their tensile strength, and renders them waterproof, dust-proof, and wearproof. Such floors being non-absorbent of oils, acids, milk, etc., are thereby preserved and made permanently sanitary.

When first put on, "Ironite" is black, but the colour soon turns to a reddish brick colour, and eventually becomes a natural brown stone shade, but paint or paper can be applied satisfactorily over the "Ironited" surface. The quantity of the material needed to waterproof a given surface depends on its character and nature, but on ordinary surfaces 1 lb. of "Ironite," allowing for three coats, will cover 2 sq. yds. to 2½ sq. yds. The sole agents for the material are Messrs. S. Thornely Mott & Vines, Ltd., 1, Victoria-street, S.W.

THE LIGHTING OF PICTURE THEATRES.

The British Thomson-Houston Company, Ltd., Upper Thames-street, E.C., have issued a pamphlet describing the B.T.H. Eye-Rest system of indirect lighting, the possibilities of which were to be judged at the recent Kinematograph Exhibition at Olympia. The subject is important in view of the popularity of the animated photograph and the attention given by architects to the design and equipment of picture theatres. The Eye-Rest system employs suspended bowls containing powerful reflectors. These are upturned to the ceiling, and the light from the lamps is first reflected to the ceiling and then distributed uniformly over the whole auditorium. The result is an efficient but restful lighting scheme. Another appliance is the B.T.H. Metallic Theatre Dimmer, by means of which the lighting of the house is gradually altered, and the audience is not subjected to the uncomfortable effect due to lights being suddenly switched on or off. It is claimed that the B.T.H. Metallic Dimmer is more reliable and effective than the usual liquid dimmers.

LABOUR IN THE COLONIES.

The following information for intending emigrants has been issued officially:—

In Sydney, New South Wales, and suburbs, the building (except stonemasons) and iron trades have been fairly well employed, and factory workers have been busy; competent men in these trades and strong railway labourers are in some demand. In South Australia, plasterers and brickmakers are well employed, and masons and plumbers are in fair request; but, though trade as regards carpenters, joiners, and galvanised iron-workers is fair, no additional hands are required, and the demand for stonecutters, bricklayers, painters, and builders' labourers is quiet. The building trades have been busy in Auckland, New Zealand, Christchurch, Wellington, and several smaller places, and the same applies to Johannesburg, South Africa. There is no demand for more labour at Pretoria. At Cape Town employment has been good; but there is no demand for more labour, except for a few skilled carpenters, plumbers, and plasterers. At Durban there is a demand for a few skilled carpenters. There is a good demand for farm labourers, railway navvies, and mechanics in Canada from the beginning of April. In the United States of America the labour market is overstocked. Unemployment, especially among unskilled labourers, is very prevalent, and competition for a vacant berth is as keen in New York as in London. British emigrants would be ill-advised to go to New York in search of employment, especially in view of the high cost of living and the heavy general expenses.

GENERAL BUILDING NEWS.

NEW CHURCH, CATFORD.

Messrs. George Baines & Son are the architects for the United Methodist Church which is to be erected in Torridon-road, Catford. The seating accommodation will provide for 400 people, and the cost of the building is estimated at £3,110. The contractors are Messrs. E. A. Roome & Co.

METHODIST CHAPEL, ATTLEBOROUGH.

Messrs. Scott & Son, of Norwich, are the architects for the new chapel which has been erected at a cost of £1,400. The building will provide accommodation for 245 people, while at the rear will be a schoolroom, vestry, and offices. The contractor is Mr. E. J. Smith, of Bunwell.

ABERDEEN UNIVERSITY EXTENSION.

A new wing has been added to King's College at this University from the designs of Mr. A. Marshall Mackenzie, A.R.S.A. The new building has been erected for the purpose of housing the English History, French, and German classes. The contractors were:—Mason, Mr. James Gauld, builder; plasterers, Messrs. Roger & Baxter; carpenter work, Messrs. D. Macandrew & Co.; plumber, Mr. Walter Simpson; and painters, Messrs. George Donald & Sons.

CHURCH HALL, BLAYDON.

The new St. Cuthbert's Church Hall has been erected at a cost of £2,700 from the designs of Messrs. Clark & Moscrop, architects, of Darlington. On the lower floor is a large hall, billiard-room, heating chamber, etc., while on the two floors above are class-rooms, clubroom, assembly hall, etc. The contractor was Mr. H. Smith, of Ashington.

NEW LIBRARY, BOURNEMOUTH.

A new central library has been erected at Lansdowne, Bournemouth. The plans were prepared by Mr. F. W. Lacey, the Borough Architect. The building contains nearly 2,000 volumes of considerable value.

CHURCH HALL, PRESTON PARK, BRIGHTON.

This building, the gift of Prebendary Gerald Moor, M.A., and Mrs. Moor, was last week dedicated by the Bishop of Chichester for the use of the Parish of St. John, as a Sunday-school and hall for social purposes, with seating for 400, in addition to a platform, with retiring-rooms, and clubrooms for a men's institute. In the rear a bowling-green is being prepared. Mr. H. J. Penfold, of Preston-road, Brighton, was the builder. The walls are faced externally with Crowborough bricks and red dressings; the roofs are covered with Brabourne tiles. The metal casements and lead-glazing, including heraldic shields, are by Messrs. John Hall & Co., of Euston-road; the heating engineer was Mr. William J. Fox, of Great James-street, Bedford-row; the electrician, Mr. Ernest Fellingham, North-road, Brighton; the dedication tablet in repoussé copper was by Messrs. Humphries, Jackson, & Ambler, of Manchester. Mr. Francis Hooper, F.R.I.B.A., of Norfolk House, Norfolk-street, Strand, was the architect.

TRADE NEWS.

The Council Schools, Flint, are being supplied with Shorland's Warm Air Ventilating patent Manchester Grates by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

The extensions to the City Hospital, Coventry, are being supplied with Shorland's double-fronted patent Manchester stoves with descending smoke flues, patent Manchester grates, and exhaust roof ventilators, by the same firm.

Under the direction of Mr. John Jackson, architect, Bradford, Boyle's latest patent "air-pump" ventilators have been employed in connection with the ventilation of the Elite Picture House, Bradford.

OBITUARY.

Mr. S. R. J. Smith.

The death, on March 26, at a private nursing home, Clapham, is announced of Mr. Sidney Robert James Smith, F.R.I.B.A., F.S.I., of No. 8, Duke-street, Adelphi, and No. 96, Lansdowne-road, S.W., aged fifty-five years. Mr. Smith was the elder son of Mr. John Smith, of South Lambeth. He was elected in 1879 an Associate, and in 1891 a Fellow, of the Royal Institute of British Architects; he was a member of the Architectural Association (rejoining in 1897), and a liberal subscriber to their New Premises Fund. In the earlier years of his professional career Mr. Smith was associated with the business of H. E. Coe, who died in December, 1885. Of his principal architectural works the following have been illustrated in our columns:—Public Library, Norwood (September 24, 1887); Tate Public Library, South Lambeth-road (December 11, 1887); Durning Library, Lower Kennington-lane (August 11, 1888); and the Tate National Gallery of British Art, Millbank, S.W. (February 19, 1892, proposed plans; and January 2, 1897, revised plans, with view of the building as carried out). The Gallery was opened by the late King on July 21, 1897, and ten rooms were added in 1898-9. In respect of the extensions (together with the new railings and piers) that were made five years ago, and in which Mr. Smith had no part or share, we may refer our readers to a "Note" and his letter in the *Builder* of May 16, 1908. We have also illustrated his designs for the Sir Henry Tate, Balham branch, Library (May 9, 1908); new concert-room and examination hall, Royal College of Music, chosen in competition (July 20, 1901); and suggested scheme for an "Edward VII." bridge across the Thames, with a new road to St. Paul's Churchyard, and a monument to the late King, at the south transept of the Cathedral (June 30, 1911). In January, 1899, Mr. Smith was appointed architect to the Lambeth Board of Guardians, for whom he carried out many large buildings, amongst them being the new Nurses' Home and offices (with separate quarters for more than 100 nurses), on the site of the old Board-room in Brook-street, Kennington-road; alterations and improvements, at a cost of some £15,000, of the Brook-street Infirmary; and the receiving wards at the Norwood Schools, 1903-4; also the disinfecting house at the Infirmary, the new receiving wards for children, with additions and improvements at the Renfrew-road Workhouse, Lower Kennington-lane, S.E.; and the new buildings, comprising the relief-station, nurses' home, Guardians' Offices, etc., which form part of a comprehensive scheme that will involve a total expenditure of about £58,000 (1900-2). Mr. Smith was the architect of the Tate Central Public Library, Brixton, and Public Library, Streatham (1890-2); the Cripplegate Polytechnic Institute, Golden-lane, St. Luke's, for which his designs, in which he was, we believe, assisted by Mr. F. Hammond, were accepted in competition, in 1894; Balham branch public library, for the Streatham Public Libraries Commissioners, 1893; stone façade of the City and South London Railway-station, Lombard-street, E.C., 1897-8; the Sir Augustus Harris memorial drinking-fountain, Drury-lane Theatre, 1897, as honorary architect; Sir Henry Tate memorial, Nurses' Home, Silvertown, and the Central Library, in Tunnel-avenue, for the Greenwich Borough Council (in open competition), 1904-5; Euston terminus, with offices above, of the City and South London Railway, 1908; a house in Green-street, Mayfair, for Lord Ribblesdale, and other houses and stables in Park-lane, North-row, and the immediate neighbourhood; Hammersmith Public Library, Shepherd's Bush-green; and extensions, High School for Girls, High-road, Streatham. In conjunction with Mr. Spencer W. Grant he prepared the designs for St. Thomas's Church, Telford Park, Streatham; in 1903 he was one of the six architects nominated to compete for the Central Library, Hammersmith. Amongst his most recent works is the library—the gift of Lady Tate to the Bedford College for Women, Inner Circle, Regent's Park, N.W. Mr. Smith acted as assessor in many important competitions, including those for the Tavistock-road, Plymouth, improvements scheme, 1898; the central public libraries, Albion-street, Kingston-on-Hull, Bridgwater, and Workington; offices and buildings in Euston-road, St. Pancras, for the Hearts of Oak Benefit Society, and the Art School, Hull (1901-2); and offices, fire-station, etc., for Malden and Coombe, Surrey, Urban District Council. The funeral took place on Wednesday, April 2, at Streatham Cemetery, after a service in All Saints' Church, South Lambeth.

Wesley Hall, Erith: View from Avenue-road.

Mr. A. C. Morris Edwards, A.R.I.B.A., Architect.

WESLEY HALL, ERITH.

THIS is being erected on a site in Avenue-road, Erith, for the trustees of the chapel. The Hall is planned to seat 400 persons, with three classrooms at the rear in connection with the Sunday school.

The Hall is approached through a lobby, with cloaks on one side and stairs on the other, giving access to a lantern chamber over for the use of lectures, etc.

The external materials are red bricks of varied colour, with tile arches to windows and doors on the elevation to Avenue-road, and stock bricks as facing for the rest of the building, with red-brick quoins and tile arches to the windows. A dark-red hand-made sand-faced tile is being used for the roof.

The Hall is finished quite simply inside with a rough plaster dado and a coved ceiling with moulded bands.

The windows are semicircular headed, with steel casements glazed with cathedral glass in lead cames, and the red-brick dressings are continued through to the inside of the wall.

At present the two main classrooms and two bays of the Hall are being proceeded with. The scheme when finished will cost between £1,300–£1,500 complete, and the contractors are Messrs. Gunning & Son, of Erith.

THIRD INTERNATIONAL ROAD CONGRESS.

THE Governments of the following countries have accepted the invitation of H.M. Government to appoint delegates to attend the forthcoming International Road Congress, to be held in London next June:—Algiers, Argentine, Austria, Belgium, Bulgaria, Chili, Colombia, China, Cuba, Denmark, France, Germany (including separate delegates from the States of Prussia, Bavaria, Saxony, Baden, Brunswick, Hamburg, and Alsace-Lorraine), Hungary, Japan, Luxembourg, Switzerland, Monaco, Netherlands, Norway, Russia, Servia, Siam, Spain, and the United States.

The following Governments within the British Empire have appointed or propose to appoint official delegates:—Canada, India, New South Wales, New Zealand, Queensland, South Australia, and Victoria.

In addition to delegates appointed by the Governments, many provinces, municipalities, and highway authorities in all parts of the world have appointed representatives to attend the Congress.

The organisation of the International Road Congress is in the hands of a committee formed of representatives of highway authorities, scientific institutions, learned societies, organisations of automobilists, cyclists, road users, and others.

The Organising Council received some time ago offers of practical assistance from firms and others engaged in the road industry, and it was decided to form a Traders' Committee. This committee is composed of representatives of all branches of road-makers, including manufacturers of steam rollers and other heavy machinery, road tarring appliances, stone paving, and firms engaged in the construction of bituminous roads, wood-paved roads, quarry owners, and others. The President of the Committee is Lord Cowdray, and the Hon. Secretaries are Messrs. H. Beadle and H. L. Wettern.

The Traders' Committee is applying its energies in raising funds for the Congress, in arranging excursions and entertainments for the members of the Congress, and in making proposals to render the exhibition in connection with the Congress of the utmost value to the British trade.

This exhibition at the Royal Horticultural Hall will bring together for the first time a representative exhibition of road-making materials and appliances, including heavy road machinery.

The organisation of the exhibition is in the hands of a committee of which the Rt. Hon. Earl Beauchamp, K.C.M.G., is President. The Hon. Secretary is Mr. H. P. Maybury, and the Assistant Secretary and Manager Captain L. A. Kingston. The Exhibition Committee is assisted by an Advisory Committee of traders and exhibitors.

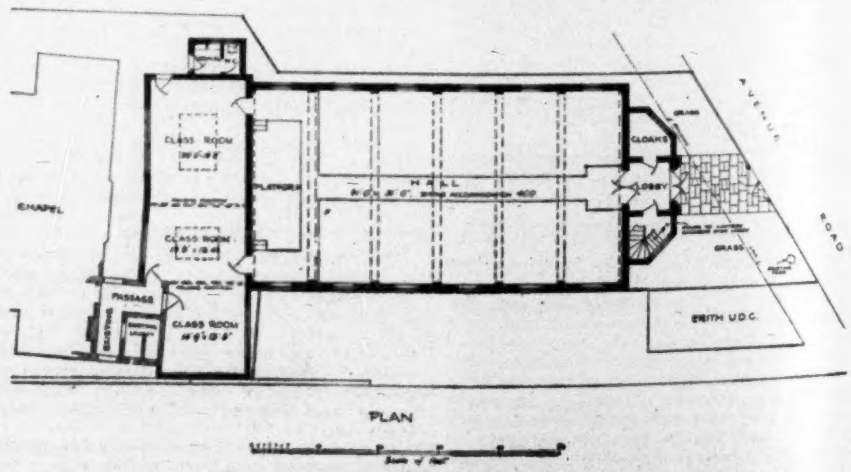
TOWN PLANNING AT FINCHLEY.

AT a recent meeting of leading residents of Finchley at the King Edward's Hall, Finchley, Mr. Raymond Unwin, F.R.I.B.A., gave a lecture on Town Planning, with particular reference to the extension of the Hampstead Garden Suburb made possible by the public spirit of Co-partnership Tenants, Ltd., which, by taking over the responsibility for the development of more than 300 acres, has made possible a town-planning scheme for a considerable part of the Finchley area.

In presiding, Mr. Henry Vivian, J.P., said that no one had given more thought to the development of our cities and towns than Mr. Unwin, who had done much to educate public opinion in the matter. The passing of the Town Planning Act of 1909 had carried the movement much further. It was not too much to say that the interest in and the enthusiasm for the better development of our cities and towns had advanced more during the seven years that Mr. Burns had held office than during the preceding fifty years, and no piece of work in which he had been engaged would give him greater satisfaction than his efforts on behalf of town planning.

Mr. Unwin then gave his lecture, entitled "We Plan our Houses, Why Not Plan Finchley?" In the course of his address the lecturer asked what we should think of a man who allowed his builder to build him a house without a plan, to put the rooms how and where they happened to come easiest, the dining-room next to the front door, and the drawing-room between the kitchen and the bath-room. Yet they had been content to do exactly the same thing in developing their towns and suburbs; they let any owner and any builder build what and where he liked, subject only to a few by-laws affecting the building details only. Apart from the Town Planning Act, he said the local authority had no power to see that streets led anywhere or connected up with one another, nor to prevent one class of property being entirely ruined by the erection of something unsuitable next door. When a man of ordinary common sense desired to build a house he would first consider his requirements, present and future, and then, either himself or through his architect, work out those requirements in detail. If it were worth while to take all that thought and care in planning such a simple thing as a house, surely it was the worst of folly to let their towns and suburbs grow haphazard without any plan at all. The result of leaving development to chance had been that land was wasted in some places for want of access, while in others it was crowded with dwellings to such an extent that fresh air and sunlight were excluded, the children had nowhere but the streets to play in, and their health and characters alike suffered. All this could be remedied by a town-planning scheme which regulated the use of the land to the advantage of everybody, putting shopping centres in the most convenient places, and grouping industries where the greatest facilities existed for them without injuriously affecting other property, and securing the health and amenity of the residential areas by protecting them from the incursion of objectionable buildings or local slums.

Before the meeting concluded Mr. John



Wesley Hall, Erith.

Mr. A. C. Morris Edwards, A.R.I.B.A., Architect.

Boggon (Chairman of the Finchley Urban District Council) proposed and Mr. Walter C. Cope (Chairman of the General Purposes Committee) seconded the following resolution, which was supported by Councillor H. F. Nicholls (Chairman of the Town Planning Committee), and carried unanimously:—"That this meeting assembled to consider the proposed town-planning scheme for Finchley (which includes a considerable part of the Hampstead Garden Suburb) earnestly protests against the proposed Northern Junction Railway Bill, which would authorise the construction of a line of railway promoted mainly for goods traffic through the heart of Finchley parish, and not only seriously injure the Garden Suburb, but largely increase the difficulties in designing or carrying out a satisfactory scheme for the parish."

PRISON BUILDINGS.

APPENDED to the Report of the Commissioners of Prisons for the year ended March 31, 1912, is a detailed statement by Major H. S. Rogers, R.E., to the Commissioners, on the building works carried out or in progress during that period. From this it appears that at Borstal Prison extensive alterations to the kitchen were finished, the new offices, etc., at the main entrance were nearly completed, and the demolition of the old block of temporary offices was commenced. There remain, however, the provision of a new laundry, industrial shops furnished with power machinery, a number of farm and other buildings, as well as sewage disposal and other works to be carried out before the institution is fully completed. The provision of more and better quarters for the subordinate staff has become a pressing need, and it has been decided to commence work on the construction of a large number of cottages. The scheme for the full number of quarters required and the walls separating them from the gardens of the institution has been sanctioned, and the programme of work on this officers' quarters' scheme, as well as on the institution scheme, will enable large numbers of the inmates to receive valuable instruction in practical building work for some years to come.

At Dartmoor the last of the old cell buildings to be replaced by a modern block was pulled down, and work on the construction of the modern block was started.

At Portland the working parties were concentrated on the construction of quarters for subordinate officers, and satisfactory progress was made. It will take several more years to complete the full number of cottages required, but, a considerable number having been furnished, it has been decided to recommence work on the scheme which has been held in abeyance for a year for reconstructing the prison. Work on the demolition and rebuilding piece by piece is now being taken up.

The building of a new hospital for both convict and local prisoners at Maidstone Prison was commenced. It will replace the inconvenient and inadequate hospital accommodation over the males' reception-room on the local side.

At Wandsworth and Parkhurst Prisons the laundries have been altered and converted for the use of steam power, and arrangements have been made for similar works to be carried out at Wakefield, Portland, and other prisons.

During the year it was found necessary to have the Governor's house at Pentonville vacated, as this old building had become unsafe, probably owing to recent underground works in the vicinity having drained the clay soil under the building. It will be necessary to build a new quarter at Pentonville, and this will be taken up in due course. The hot, dry summer of 1911 has had somewhat disastrous effects on a large number of buildings, especially those built on clay. At Parkhurst, for instance, where there are a large number of houses and cottages built many years ago on sloping ground, many of the older buildings have developed cracks, and in one case (a superior officer's quarters) the house had to be vacated, and it is found that the damage is so great as to necessitate rebuilding. Temporary measures to keep many of the damaged cottages habitable are being taken, but it seems probable that it will be the more economical course in the long run to build new cottages and eventually pull down the old damaged structures, which in any case hardly come up to modern requirements.

During the year an exhaustive survey of the drainage system of Pentonville Prison was made, and it was found that the only means of obtaining satisfactory results would be an entirely new system. The present main drains (brick culverts) were put in when the prison was built about 1840, and have served their purpose. A scheme and estimate for installing an entirely new system of underground drains has received approval, and this will be carried out section by section during the next few years, commencing in the current year, 1912-13.

A long step has been effected in providing workshop accommodation for associated labour at prisons where it is practically non-existent or very inadequate. The work is undertaken in conformity with the defined policy of the Commissioners to provide, as rapidly as funds and labour permit, sufficient shops for associated labour to enable all prisoners entitled to such associated labour being employed in properly lighted and ventilated shops. The very large majority of English local prisons were constructed for carrying out cellular and not associated labour, and the provision of adequate shop accommodation for practically all prisons was a large undertaking, so that, although a great deal has been done in years past, much remains to be done. An extensive scheme for providing large new workshops and stores, and additions to those already existing, at Wandsworth Prison, will take a number of years to carry out.

PARLIAMENTARY NOTES.

British Museum.

IN reply to Mr. Alden, Mr. Masterman said he understood that the Arthur Morrison collection of Japanese and Chinese paintings would be transferred to the British Museum in the course of next month, and would be housed provisionally in the existing department of prints and drawings pending the transfer of that department to the new wing. A sub-department of Oriental prints and drawings had recently been created.

Indian Architecture.

Replying to a question by Mr. King on Tuesday, Mr. Montagu stated that the Secretary of State for India had not yet received the report on native Indian architecture, but he expected a communication from the Government of India in May.

Delhi.

Answering a number of questions by Mr. King, Mr. Montagu (Under Secretary of State for India) said that, pending further papers from India, he was unable to say whether Mr. J. Begg, Consulting Architect to the Government of India, had expressed his views on the laying-out and building of new Delhi, although he had no doubt he had been consulted. Sir Swinton Jacob was not now in India, but it was hoped he would meet the selected architects in connection with the work of designing the new capital. Plans and drawings had not yet been received from Mr. Lutyens, and Mr. Baker said he could not say when they would be exhibited. He understood that the Delhi Town Planning Committee had presented a report, but it had not yet reached this country, so that he could not say whether it contained a plan of the lay-out of the new city.

Irish Tapestry.

Answering a question by Mr Ginnell as to whether the ownership of the historical pictures in Irish tapestry was expressly conveyed to the Bank of Ireland with the tenancy of the building, Mr. Russell said the deed of conveyance of the Parliament House at College Green to the Governors of the Bank of Ireland contains no reference to any tapestry. He would not like to say whose property the tapestry was deemed to be at the present time.

LEGAL COLUMN.

Trade Union Law.

The case of Santen *v.* Busnach and another, recently decided in the Court of Appeal, again raised the ever-recurring question as to what action can legally be taken by members of a trade union who refuse to work with other persons. The plaintiff, who was a member of a trade union, was engaged by an employer who had in his employ two members, at least, of another union. These latter, the defendants in the action, informed the plaintiff that they would not work with her unless she joined their union. The plaintiff declined to do so, and the defendants sought an interview with their employer, who then informed the plaintiff: "My workpeople refuse to work with you and will go on strike if you do not join; you'll have to go." The question before the Court of Appeal was whether the trial judge had acted rightly in nonsuiting the plaintiff.

To understand this case correctly three things have to be borne in mind:—(1) There was no suggestion or evidence of any conspiracy. (2) That no breach of contract was induced by the defendants, for apparently the plaintiff's services were dispensed with without breach. (3) The Trade Disputes Act had no application, for no dispute was in existence or contemplation.

The sole question, therefore, for the Court was, had the defendants used actionable threats or intimidation, and the Court of Appeal, on the authority of Allen *v.* Flood, answered this question in the negative.

The report of the case of Allen *v.* Flood in the House of Lords occupies 180 pages in the "Law Reports," and there was great divergence of opinion, both amongst the eight Law Lords and the judges, who were also consulted.

The facts of that case were somewhat similar to those in the present case. The Boilermakers objected to work with the Shipwrights, because the members of the latter society were allowed to work on ironwork, by the rules of their union, although on the job they were engaged upon they were only working on wood. The appellant, a member and delegate of the Boilermakers' Union, informed the men's employers that the men would not consent to work with the shipwrights, and in consequence the services of the shipwrights were dispensed with. It is important to observe that there was no allegation of conspiracy, and that no contracts were broken, as the men in question were employed by the day, and were discharged at the end of the day. There was no coercion or intimidation, but the jury had found that the appellant had acted maliciously. The real point that evoked so much discussion was, whether an act, which by itself would constitute no civil wrong, would afford a cause of action if it was done maliciously. The majority of the Lords negatived this proposition. It was pointed out that every workman had the right to exercise his option whom he would work with, and that had the workmen intimated that they would go out on strike similar results might have ensued.

It has often been alleged that the Lords went back on their decision in this case in the subsequent case of Quinn *v.* Leatham, but we think it can be shown that this is not the fact. In Quinn's case some employees objected to the employment of non-union men. The plaintiff asked to have them admitted to the union, and offered to pay their fines and fees; this offer was refused. The defendants demanded the dismissal of the men, and, when this was refused, wrote to one of the plaintiff's customers, threatening to call out his men if he took any more of the plaintiff's goods, and in consequence this customer ceased to deal with the plaintiff, and one employee of the plaintiff at least was dismissed without notice. Black lists were also issued by some of the defendants. Here there was a conspiracy, there were threats, and an interference with contractual relations. The distinction between the cases is so clear that it need not be laboured. In Allen *v.* Flood the defendants gave a warning to their employers of certain steps they intended to take to protect their own trade interests; in Quinn *v.* Leatham the defendants entered into a conspiracy to compel the plaintiff to adopt a certain course, and used threats, intimidation, and coercion to attain their ends, also causing a breach of contract. In our note to the recent case, Scruttons, Ltd., *v.* Lewis (the *Builder*, February 7), we referred to the summary of the law on this question, given by Lord Loreburn in his judgment in Conway *v.* Wade. Addressing himself to the point, "in what circumstances an individual could be sued for inducing someone not to employ or not to serve another," apart from the Trade Disputes Act he said: "If the inducement was accompanied with violence or threats (always remembering that a warning is one thing and a threat another), there was a good ground of action. I next suppose there was no violence and no threat, and yet the inducement involved a breach of contract. There also it was established, after a long controversy, beginning with Lumley *v.* Gye, in 1853, that an action could be maintained unless at all events some justification could be made good. But suppose one person simply induced someone not to employ another or not to serve another, without violence, or threat, or breach of contract, would an action lie, and in what circumstances in such a case? I believe there has not been an exhaustive answer to that question. The further difficulty arises, what is a sufficient justification? Is it supplied by self-interest or by trade competition, or by what other condition or motive? No answer in general terms has ever been given, and perhaps no answer can be given. A parallel difficulty arises where the inducement is by two or more persons acting together."

An answer to the first of these questions seems afforded by the case now decided by the

Court of Appeal and Allen v. Flood. If the person acts alone in his own interest, and uses no threats or violence, and there is no breach of contract, then no action lies.

Fencing Land Adjoining Streets.

The decision of a Divisional Court in the recent case, Upjohn v. Willesden Urban District Council, although it turned upon the terms of a local Act of Parliament, is of interest, as it has a bearing upon one of the sections of the Public Health Acts (Amendment) Act, 1907, which has hitherto received no judicial interpretation.

The private Act provides that if any land in the district adjoining any street is allowed to remain unfenced, and such land is, "in the opinion of the Council," owing to the absence or inadequate repair of any such fence, a source of danger to passengers, or is used for any immoral purpose, or for any purpose causing inconvenience or annoyance to the public, the Council may, after giving notice to the owner, fence the land and recover the expenses summarily from the owner.

The owner had fenced the land in question by upright posts 3 ft. 4 in. high, 8 ft. apart, along the top of which fir poles were laid bound with hoop-iron. The Council, being of the opinion that, owing to the absence of a proper fence, the land was used for purposes causing inconvenience or annoyance to the public, gave notice to the owner to fence the same, and, on his noncompliance, had fenced the land and summoned the owner for the expenses, £5 11s. 6d.

The Justices had held that the notice was good, and that the fence erected by the owner was not a fence complying with the section, but that it was for the Council to determine whether the land had been used for improper purposes.

The Divisional Court upheld this decision, holding that the fence must be adequate for the purposes indicated by the section, which the fence erected by the defendant was not; therefore, the land must be deemed unfenced. It was argued that the opinion of the Council was only to be exercised as regard the safety of the public, and that it was for the justices to decide whether the land was put to improper uses; but the Court, with some hesitation, held that the Council had to decide the uses the land was put to as well.

This latter point does not arise under sect. 31 of the Public Health Acts (Amendment) Act, 1907, as the words, "in the opinion of the Council," do not occur in it.

Sect. 31 of this Act occurs in Part II., which, it will be remembered, is only operative in districts to which it is applied by order of the Local Government Board or a Secretary of State.

The section is in clearer terms than the Private Act considered above, but before it can be put into operation the local authority has to apply to the Local Government Board to empower them to proceed. Under the section, if any land other than land forming part of any common adjoining any street, is allowed to remain unfenced, or if the fences are allowed to remain out of repair, and in consequence such land is a source of danger to passengers, or is used for improper purposes, then the local authority, having obtained the authority of the Local Government Board as mentioned above, after having given the owner or occupier a fourteen days' notice in writing to fence or repair the fences, may proceed to cause the land to be fenced or the fences to be repaired "in such manner as they think fit, and the reasonable expenses thereby incurred shall be recoverable from such owner or occupier summarily as a civil debt."

Under the above decision, as applied to this section, it will be seen that land may be deemed unfenced unless it is fenced in a manner to attain the objects aimed at by the section; but under this section, as distinguished from that of the local Act under consideration, the questions as to whether the land was so fenced, whether land, in consequence of the defects in the fencing, was a danger or was used for improper purposes, and whether the expenses incurred by the local authority in fencing or repair were reasonable, would all be left to the Court of summary jurisdiction.

LONDON COUNCILS.

Leyton.—The Public Health Committee recommend the acceptance of the tender of Messrs. Manders & Co., at £608, for constructing a sewer at the rear of Crescent-road. A grant of £200 has been accepted from the Road Board for widening Lea Bridge-road, near Knotts Green. Tenders are invited for heating Church-road School extension. The following plans have been passed:—Mr. Clifford M. Bush, five shops and workshop, High-road, Leytonstone; Messrs. Leigh & Mellish, cinema, Lea Birdge-road, corner of Theobald-road; Mr. E. F. Selby, three houses, Hainault-road.

Middlesex.—Tenders are to be obtained for paving a portion of the footpath on the south side of Harrow-road, Wembley, with stone flags. The work is estimated to cost £500. Subject to the approval of the Road Board to certain conditions, the tender of the Limmer Asphalte Paving Company has been accepted for resurfacing with "Limmer" asphalt certain sections of Bath-road, at 8s. per square yard and 1s. per square yard for maintenance for a period of five years, and 1s. 3d. per square yard for a second five years. Subject also to the above-mentioned conditions, the tender of the Trinidad Lake Asphalte Company has been accepted for resurfacing with "Trinidad Lake" asphalt certain other sections of Bath-road at the same price per square yard, both for laying and maintenance.

Walthamstow.—It has been decided not to insist upon the carrying up of party and external walls to form parapets where (1) it is intended to erect a block of houses not exceeding six and at a distance of 6 ft. from the nearest adjoining building: (2) such houses are for purely residential purposes, and consist of no more than two stories; (3) the roof of such block of houses is hipped at each end. Plans have been lodged by Messrs. H. Slow & Sons for the erection of eight houses in Castleton-road, and by Mr. E. Brice for the erection of an electric theatre in Erskine-road.

FOREIGN AND COLONIAL.

Progress of Argentina.

In his annual Report, recently presented to Parliament by the Foreign Office, Mr. H. G. Mackie, British Consul for the district of Buenos Ayres, estimates the population of the Argentine Republic at 7,000,000, of which about one-half live in the towns. The foreign population includes 29,712 British subjects. The cosmopolitan town of Buenos Ayres—rightly called the city of great docks and railway termini—is the Federal capital as well as the commercial emporium of the nation. It occupies an imposing position on the southern bank of the River Plate, about 150 miles from the Atlantic Ocean. The superficial area of the city is 47,150 acres. The growing prosperity of the Republic is perceptibly reflected by the city itself. The dwarf-like Spanish houses of the flat roof and courtyard type are gradually making way for large and imposing edifices of no mean architectural beauty. The scale on which the early error of design to be found in the cramped formation of the city is being effaced bears testimony to the growth of national opulence and spirit of enterprise at the back of these reforms, as well as to the business openings which a modern city of this size must present on every side. The labyrinth of narrow streets, of which the ancient city was entirely composed, is now being relieved by broad avenues, shaded plazas, and parks. Thus in 1904 an avenue measuring some 40 yds. wide was cut through the old city at a cost of £850,000. The new thoroughfare is now a street of fashionable shops, business offices, and hotels, extending for over a mile from the Plaza de Mayo at Government House in a westward direction, to another spacious plaza embellished by the imposing Federal Congress Hall, now being completed. Underground railways are about to take the place of the electric tramways common to almost every street of the metropolis, and the Anglo-Argentine Tramway Company have been entrusted with the preparation of plans for a tube railway from the Plaza de Mayo to the suburb of Palermo. This improvement is to be carried out in conjunction with the proposed north diagonal avenue which the municipality seemingly intends to lay out. Apart from British participation in the architectural development of the city, Buenos Ayres presents many features of interest from a purely commercial standpoint. British capital is conspicuously represented in docks, railways, tramways, factories, and other large enterprises.

Tenders were recently invited for the construction of extensive new docks at Buenos Ayres, and the contract has been secured by a British firm, whose plans have been adopted. The works will extend over a period of five years, and will be divided into three sections. The first and second of these sections comprise a dock each, and the third section two docks. The extreme length of the two docks will be 639½ yds., the third 503 yds., and the fourth 382½ yds. Each dock will have a uniform breadth of 114 yds., and a depth of 33 ft. of water at low tide. The total length of the quays will be 7,000 yds. The masonry work will require some 2,000,000 tons of stone, which will be obtained from the contractors' quarries at Conchillas, and a large quantity of Portland cement will be needed. Two thousand men will be employed on the construction, which will cost £5,000,000. The breakwater will measure 2,900 yds., and provide storage space for coal and liquid fuel. The excavations connected with the work will be 13,300,000 cubic yds., and the masonry work 580,000 cubic yds. of concrete.

The present waterworks, which are no longer adequate for the supply of water for the city and suburbs, are soon to give place to a new plant, situated a short distance from the limits of the town. The new works cover an area of nearly 50 acres; the water-tower will have a capacity of 700 gallons of water a second, or 6,000,000 gallons in twenty-four hours. Before service to the public the water will pass through seven filters, each 30 ft. long by 200 ft. wide. These works, on which over 1,000 men are employed, will be completed shortly. It is satisfactory to note that the contract for the powerful pumps has been secured by a British firm for £218,000, while another British firm have successfully tendered for the machinery needed for pumping the water from the river into the water-tower at a cost of £21,900. A third successful contractor out of a field of twelve foreign competitors is a British company, whose tender for £200,000 was submitted for an enormous reservoir of a total capacity of 16,000,000 gallons.

The extension of the drainage system to the northern and western limits of the city is being pushed forward with all speed. The main drains are to be constructed by tender, and are to be completed in two and a half years. A contract of £370,000 for the construction of 25,000 cast-iron pipes and 40,000 tons of cast-iron rings, with 1,000 tons of screws and bolts, has been awarded to three British firms. A new general post-office and a bank clearing-house are also about to be built at Buenos Ayres. It is estimated that the public works (including railways) projected or in course of construction in various parts of the Republic exceeds the substantial sum of £40,000,000.

The projected canal from the port of Buenos Ayres to the deep water of the River Parana—abandoned since the death of the engineer, Mr. E. Mitre—has lately been revived. The object of the canal is to facilitate navigation between the capital and Rosario, by enabling vessels of deep draught to circumvent the Parana River. The canal could also be made accessible to large transatlantic liners, for which it would provide a sort of continuous dock. It is proposed to construct it in two sections—one from the port to the mouth of the River Lujan, along the coast, and the other from a point of that river to the Parana, which it would join where the waters begin to deepen. The canal would have a total length of about 30 miles, a depth of 24 ft. to 30 ft., and a width varying between 240 ft. and 450 ft. The total cost is estimated at £10,000,000.

In a separate section of his Report Mr. Consul Mackie writes this warning:—"It cannot be too strongly emphasised that, to an Englishman of the working class, this country does not offer any safe opening unless he has enough money to take up a holding and work it. The labouring element is composed for the most part of Italians and Spaniards, to whom the environment does not appear so strange as it must of necessity do to a British labourer unaccustomed to the low scale of living to be met with in the rural districts of Argentina. In some parts of the Republic, notably in the northern districts, the climate is altogether unsuited to British constitutions. A large number of Englishmen who seek employment in the towns are attracted by the prospects of a high wage, but entirely overlook the corresponding high cost of living, and become reduced to a state of destitution. This warning applies to all persons in search of work who do not possess a knowledge of Spanish, or who may be burdened by large families. They should in no circumstances venture to this country unless they are provided with funds or have situations to go to. The influx of unsuitable persons has at times been so great that the local British benevolent societies have been altogether unable to grapple with the distress." Notwithstanding this, we notice that it is stated in another part of the Report that the immigrants in 1911 included 13,699 from the United Kingdom.

BARRY MASTER BUILDERS.

At a recent meeting of the Barry Master Builders' Association it was decided that in future the Association be called the Barry Master Builders' and Master Painters' Association. Mr. W. Britton was elected President.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xviii.; Auction Sales, xxiv. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.**

Competitions.

APRIL 9.—**Abertillery.**—ELEMENTARY SCHOOL.—"No premium will be paid, but a qualified assessor will be appointed." Particulars from the Council Offices, Abertillery

APRIL 16.—**Staines.**—COTTAGE HOSPITAL.—Particulars from Mr. H. Scott Freeman, Staines.

APRIL 18. — **Reading.** — SCHOOLS.—The Reading Education Committee invite designs for the Kendrick Boys' and Girls' School. Competition limited to architects resident or carrying on business within the borough. See advertisement in issue of January 24 for further particulars.

April 19.—**Motherwell.**—NEW HIGH SCHOOL.—The School Board of Dalziel invite designs for new high school. Conditions of competition can be obtained on or before February 15. Assessor, Dr. J. J. Burnet. See advertisement in issue of February 7 for further particulars. See also "Competition News" (p. 266) in issue of February 28.

APRIL 21.—**Northampton.**—COUNCIL SCHOOL.—Local architects only. Second premium, 20 guineas; third premium, 10 guineas. Particulars from the Education Offices, Northampton.

APRIL 29.—**Barnet.**—MUNICIPAL OFFICES.—The Barnet U.D.C. invite designs for new Municipal Offices. Premiums £25, £15, and £10. See advertisement in issue of January 31 for further particulars.

MAY 31.—**London.**—COTTAGES AND BUNGALOWS.—Three premiums of £50 each are offered. Particulars from the Secretary, Ideal Home Exhibition, 130, Fleet-street, E.C. Assessor, Mr. Leonard Stokes, F.R.I.B.A.

JUNE 7. — **Exeter.** — HOSTEL. — The Exeter City Council invite designs for the erection of a hostel for male students. Assessor, Mr. Edwin Cooper, F.R.I.B.A. See advertisement in issue of March 14 for further particulars. Plan, etc., in this issue.

JUNE 14. — **Devonport.**—MUNICIPAL BUILDINGS AND GUILDHALL.—The Devonport Corporation invite designs for Municipal buildings and Guildhall. Premiums of £350, £150, and £100 respectively. See advertisement in issue of February 21 for further particulars. Plan, etc., in issue of February 28, p. 265.

JUNE 19. — **Newcastle-upon-Tyne.** — LAYING-OUT PORTION OF WALKER ESTATE.—The Housing Committee of the Newcastle-upon-Tyne Corporation invite competitive designs for laying-out a portion of their Walker Estate. Premiums as follows are offered: £50, £30, and £20. See advertisement in issue of March 28 for further particulars. Plan, etc., in this issue.

JULY 1. — **Sofia.** — DESIGNS FOR A ROYAL PALACE AND LAW COURTS.—Particulars from the Commercial Intelligence Branch of the Board of Trade, Basinghall-street, E.C. See page 173, August 9, and page 350, September 27, 1912.

* NO DATE.—**Forest Row.**—HOUSE.—Designs are invited in competition for a house at Forest Row, Sussex. Premiums:—First, £80 and fees for superintendence on R.I.B.A. scale; others to the value of £120. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those wiling to submit tenders, may be sent in.

APRIL 5.—**Dublin.**—REBUILDING.—For the rebuilding of premises Nos. 22 and 24, Botanic-road and 21, Prospect-avenue, Dublin. Drawings and specification with Mr. T. J. Cullen, M.R.I.A.I. architect, 25, Suffolk-street, Dublin, and quantities from Messrs. D. W. Morris & Co., surveyors, 68, Harcourt-street, on £1 deposit.

APRIL 5.—**Hull.**—HOUSE, ETC.—For erection of a house, etc., in North Boulevard. Mr. E. Whitlock, architect and surveyor, 26, Scale-lane, Hull.

APRIL 5.—**Kingsford.**—BUILDING.—For building barn, etc., and general repairs on steading at Kingsford, Alford. Plans and specifications with Mr. C. Murray, Burnside of Towlis.

APRIL 5.—**Pyle.**—HOUSE.—For erection of a detached house at South Cornelly, Pyle, Glamorgan. Plans and specification seen at Cornelly, Pyle. Mr. I. Rosser, architect and surveyor.

APRIL 5.—**Winchester.**—OFFICES.—For the erection of new offices for the Winchester Corporation Electricity Works on a site in Gordon-road, Winchester. Plans and specifications with the architect, Mr. B. D. Cancellor, 12, Jewry-street, Winchester.

APRIL 7.—**Braddock.**—COTTAGES.—For the erection of three cottages at West Taphouse, Braddock. Plans and specifications seen, and particulars at the Boconnoc Estate Office, Lostwithiel. Mr. A. E. Skentelbery, architect, Lostwithiel.

APRIL 7.—**Cardiff.**—SHOPS, ETC.—For the erection of auction galleries, offices, and shops, Nos. 25 and 27, Charles-street, Cardiff. Plans and specification seen, and quantities from Mr. John H. Phillips, F.R.I.B.A., architect, 7, Pembroke-terrace, Cardiff.

APRIL 7.—**Carlisle.**—ADDITIONS.—For alterations and additions to the drainage and sanitary plumbing at the hospital. Plans and specifications from Mr. C. W. Hill, 19, Fisher-street, Carlisle, on deposit of 10s. 6d.

APRIL 7.—**South Shields.**—ADDITIONS, ETC.—For additions and alterations to St. Hilda's Church of England School, South Shields. Plans, specification, and general conditions of contract seen, and quantities, on deposit of £2 2s., from the architect, Mr. J. H. Morton, F.R.I.B.A., South Shields and Newcastle-upon-Tyne

APRIL 8.—**Ardfield.**—ROOF, ETC.—For the erection of new roof, etc., to Ardfield Church, near Clonakilty. Plans and specifications with the architect, Mr. Samuel F. Hynes, F.R.I.B.A., 5, South-mall, Cork.

APRIL 8. — **Gowerton.** — STABLE. — The Great Western Railway invites tenders for the erection of a stable at Gowerton, Glam. Plans and specification seen, and forms of tender and quantities at the office of the Engineer at Neath Station.

APRIL 8.—**Leeds.**—HOUSE, ETC.—For rebuilding the house and shop, No. 3, Green-road, and No. 6, Pollard-street, Leeds. Forms of tender, quantities, and particulars from Mr. W. T. Lancashire, City Engineer, Municipal-buildings, Leeds.

APRIL 9.—**Edinburgh.**—OFFICES, ETC.—For the works of new kitchen offices at Craiglockhart Poorhouse, Edinburgh. Quantities from, and plans seen at, the offices of Mr. R. M. Cameron, Architect to the Council, 53, Great King-street, Edinburgh.

APRIL 9.—**Honley.**—HOUSES.—For erection of nine dwelling-houses, Bradshaw-road, Honley, for the Honley Industrial and Equitable Co-operative Society, Ltd. Mr B. Hutchinson, Secretary, Concord-street, Honley.

APRIL 9. — **Huddersfield.**—ALTERATIONS.—For alterations to the interior of the tramway offices, Northumberland-street, Huddersfield. Plans, specifications, and general conditions seen, and quantities and forms of tender from Mr. K. F. Campbell, M.Inst.C.E., Borough Engineer and Surveyor, 1, Peel-street.

* APRIL 9.—**Little Stanmore.**—MORTUARY, ETC.—The Hendon R.D.C invite tenders for mortuary and post-mortem room adjoining police-station in Whitchurch-lane, Little Stanmore. See advertisement in this issue for further particulars.

* APRIL 9.—**Newton Abbot.**—NEW SCHOOL.—The Devon County Education Authority invite tenders for a new secondary school for 208 pupils at Newton Abbot. See advertisement in this issue for further particulars.

APRIL 9.—**Sevenoaks.**—ROOM, ETC.—For the erection of an additional room for labour master, and alterations to women's lavatories, etc., at the Sevenoaks Union Workhouse, Ide-hill, Sundridge, near Sevenoaks. Plans and specifications seen, and forms of tender from the Architect, Mr. Ernest Pawley, Lic.R.I.B.A., 148, High-street, Sevenoaks.

APRIL 10.—**Cardiff.**—ALTERATIONS.—For certain structural alterations to the Dorothy Café, High-street Cardiff. Plans seen, and quantities from Mr. Geo. E. Halliday, F.R.I.B.A., 19, Castle-street, Cardiff.

APRIL 10.—**Cardiff.**—CHAPEL, ETC.—For the erection of a side chapel and first section of the tower of St Teilo's Church, Cardiff. Plans seen, and quantities from Mr. Geo. E. Halliday, F.R.I.B.A., 19, Castle-street, Cardiff.

APRIL 10. — **Climping.** — GROYNE. — For the erection of a new timber groyne on the foreshore at Climping, Sussex. Plan and specification with Mr. Arthur Holmes, Clerk to the Commissioners of Sewers, Arundel.

APRIL 10.—**Glasgow.**—HOUSE.—For proposed erection of a golf house at Blackhill golf course. Specifications and forms of tender at the Office of Public Works, City-chambers, 64, Cochrane-street.

APRIL 10.—**Usworth.**—HOUSES.—For the erection of fifty-seven workmen's dwelling-houses at New Washington. Deposit of £5 5s. to Mr. John H. Mole, Surveyor, Chester-le-Street.

APRIL 11.—**Aberdeen.**—ADDITIONS.—For additions etc., at Mill of Elrick, Auchnagatt. Mr. W Mearns Cooper, Factor, 352, King-street, Aberdeen.

APRIL 11.—**Heckmondwike.**—ADDITIONS.—For additions to Heckmondwike High-street Council School. Plans seen, and specifications, with quantities, from the Education Architect, County Hall, Wakefield. Deposit of £1. Tenders to Mr. Francis Alvey Darwin, Clerk of the County Council, County Hall, Wakefield.

APRIL 12.—**Ballymena.**—INFIRMARY.—For the erection of a new Infirmary at the Workhouse. Plans and specification at the office of the Guardians' Architects, Messrs. Patterson & Grahame, Broadway, Ballymena; or Scottish Provident Buildings, Belfast. Quantities from Mr. S. C. Hunter, Scottish Provident Buildings, Belfast, on deposit of £2 2s.

APRIL 12.—**Bradford.**—BLOCK.—For erection of observation block, for the Governors of the Nutter Orphanage. Drawings and general conditions of contract seen, and quantities and forms of tender from the City Architect, Town Hall, Bradford.

APRIL 12.—**Earlston.**—RESERVOIR.—For the completion of storage reservoir in Fans Bog. Plan, specification, and particulars at the Engineer's Office, Earlston.

APRIL 14.—**Curragh.**—QUARTERS.—For the erection of officers' mess and quarters for Royal Army Medical Corps at the Curragh. Plans, specifications, and conditions of contract at the Office of the Director of Barrack Construction, 80, Pall Mall, London, S.W., or at the Barrack Construction Office, Curragh. Deposit of 10s.

APRIL 14.—**London.**—CONVENIENCE.—For the erection of a public sanitary convenience on the Green at Edmonton. Forms of tender, specification, and quantities from Mr. Cuthbert Brown, A.M.Inst.C.E., the Engineer to the Council, Town Hall, Lower Edmonton. Deposit of £2 2s.

* APRIL 14.—**Millbank.**—NEW BUILDINGS.—The Crown Agents for the Colonies invite tenders for superstructure works to new buildings. See advertisement in this issue for further particulars.

APRIL 14.—**Port Talbot.**—PREMISES.—For the erection of block of business premises at Port Talbot, for the Commercial Buildings, Ltd. Plans and specification with Mr. D. J. Jones, M.S.A. (Evans & Jones), Talbot-road, Port Talbot.

APRIL 14.—**Warminster.**—VILLA.—For building a villa at Bath-road. Drawings and specifications with Mr. A. F. Long, architect, 53, Market-place, Warminster. Quantities on deposit of £1 1s.

APRIL 14.—**West Ham.**—REPAIRS, ETC.—For cleansing, repairing, and painting of various schools; alterations of handicraft centre, Harold-road School. Mr. William Jacques, A.R.I.B.A., Architect to the Education Committee, 2, Fen-court, Fenchurch-street, E.C. Specifications, conditions, and forms of tender on deposit of £1.

APRIL 14.—**York.**—SHOPS.—For the erection of two lock-up shops in Queen-street. Plan seen, and specification and quantities on deposit of £1 1s. from Mr. F. W. Spurr, City Engineer, Guildhall, York.

APRIL 15.—**Abersychan.**—ROOM.—For erection of a schoolroom at Pentwyn, Abersychan. Plans and specifications with Messrs. Fisher & Sons, architects, Albion-road, Pontypool.

APRIL 15. — **Burnley.** — DRILL-HALL.—For the erection of a drill-hall on the south side of the existing building, and other alterations at the Headquarters, 5th Battalion East Lancashire Regiment, Burnley. Quantities and form of tender from Mr. W. A. Quanmby, architect and surveyor, Grimshaw-street, Burnley, on deposit of £1.

APRIL 15. — **Durham.** — SCHOOLS. — For new Council schools at Ryhope and Etherley; alterations and additions at Fatfield and Binchester schools, caretaker's house at South Hetton. Specifications and general conditions of contract seen, and quantities obtained as follows:—Ryhope School, Mr. J. Eltringham, architect, Central-chambers, West Sunniside, Sunderland; Etherley new school, alterations and additions at Fatfield, and caretaker's house at South Hetton, Mr W. Rushworth, Shire Hall, Durham; alterations and improvements at Binchester Council school, Mr N. Richley, Shire Hall, Durham.

APRIL 15.—**Hillsborough.**—COTTAGES.—For the building of seventy-two labourers' cottages. Plans, specification, and tender form, on payment of 5s., from Mr. William Sinclair, Clerk of the Cononcil R.C. Offices, Workhouse, Lisburn.

APRIL 15.—**Manchester.**—ROOFING.—For the roofing over of avenues at the Hyde-road car works, Manchester. General conditions, specification, quantities, and form of tender from Mr. J. M. M'Elroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester, on deposit of £1 1s.

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those wiling to submit tenders, may be sent in.

APRIL 16.—**Newton Heath.**—SHOP.—The Lancashire and Yorkshire Railway invite tenders for the construction and erection of a waggon repair shop at Newton Heath. Plans seen, and quantities and specification at the Engineer's Office, Hunt's Bank, Manchester.

APRIL 16.—**Ogmore Vale.**—HOUSES.—For the erection of sixty-eight houses, making and forming streets, sewers, and drains at Ogmore Vale, for the Lewis-Merthyr Consolidated Collieries, Ltd. Plans and specifications at the office of Messrs. H. Dawkin Williams & Son, architects and surveyors, Blackmill, Glam.

APRIL 17.—**Campden.**—ADDITIONS.—For alterations and additions to infants' school, Campden, Glos. Drawings and specification with Mr. W. Gordon Coulton, solicitor, Chipping Campden. Quantities and form of tender, on deposit of £1 1s. from Mr. William L. Lissaman, architect and surveyor, Mickleton, Campden.

APRIL 17.—**Halifax.**—HOUSES.—Conversion of club premises into two dwelling-houses at Holmfield, Halifax. Plans and specifications seen, and quantities from Messrs. Medley Hall & Son, architects, 1, Harrison-road, Halifax.

APRIL 17.—**Shanklin.**—HALL, ETC.—For erection of a drill-hall at Shanklin, Isle of Wight. Plans, quantities, and specifications at 33a, Holyrood-street, Newport, Isle of Wight. Tenders to the Secretary, Territorial Force Association, 32, Queen's-terrace, Southampton.

APRIL 18.—**Queenstown.**—DWELLINGS.—Erection of thirty workmen's dwellings at Carrignafoy, Queenstown, and for twenty workmen's dwellings at Ballyvoloon, Queenstown, with necessary roads, sewers, water mains, boundary walls, fences, etc. Plans, specification, and general conditions, by Mr. J. A. M'Carthy, C.E., Timoleague, seen at the office of the Town Clerk, Queenstown. Form of tender and quantities, on deposit of £2, to Mr. James H. Campbell, Town Clerk, Town Hall, Queenstown.

✱ APRIL 19.—**Canterbury.**—NEW BUILDINGS.—Tenders are invited for erection of new buildings in connection with the Simon Langton Schools at Canterbury. See advertisement in this issue for further particulars.

APRIL 21.—**Rogerstone.**—HOUSES.—For the erection of twenty houses. Plans and specification with Mr. R. L. Roberts, M.S.A., Abercarn.

✱ APRIL 21.—**Tottenham.**—HALL.—The Tottenham Education Committee invite tenders for erection of a hall at Seven Sisters School, Braemar-road. See advertisement in this issue for further particulars.

APRIL 22.—**Carlisle.**—POST-OFFICE.—For the erection of Carlisle new Post-office. Drawings, specification, and a copy of the conditions and form of contract with the Postmaster, Carlisle. Quantities and forms of tender at H.M. Office of Works, Storey's-gate, London, S.W., on deposit of £1 1s.

✱ APRIL 22.—**Croydon.**—TRAMWAY DEPÔT OFFICES.—The Croydon B.C. invite tenders for additions and alterations to the offices at the Thornton Heath Tramway Depôt. See advertisement in this issue for further particulars.

APRIL 25.—**Aberdeen.**—STATION.—The Aberdeen Joint Station Committee invite tenders for the reconstruction of the joint passenger station at Aberdeen. Drawings at the office of the Engineer, Mr. James A. Parker, 80, Guild-street, Aberdeen. Specifications and schedules on deposit of £5 5s.

APRIL 26.—**Porthcawl.**—HOUSE.—For the erection of a house at Nottage, Porthcawl. Plans and specification with Mr. D. Griffiths, M.S.A., architect, Dock-street-chambers, Porthcawl.

MAY 1.—**Ballyclare.**—HALL.—For the building of Ballyclare new Orange Hall. Plans and specifications at Mr. W. S. M'Connell's, Main-street, Ballyclare.

✱ MAY 2.—**Ashford.**—TECHNICAL INSTITUTE.—The Kent Education Committee invite tenders for the erection of a new Technical Institute for 150 scholars at Ashford. See advertisement in this issue for further particulars.

MAY 6.—**Melton Mowbray.**—DESTRUCTOR.—For the erection of a refuse destructor at the old sewerage works, Leicester-road, Melton Mowbray. Particulars from Mr. Edmund Jeeves, Surveyor to the Council, Nottingham-street, Melton Mowbray. Deposit of £2 2s.

NO DATE.—**Bowden Close.**—CHURCH.—For the erection of the new Primitive Methodist church at Bowden Close, near Crook. Quantities from Mr. T. W. T. Richardson, M.S.A., architect and surveyor, 57, High-street, Stockton-on-Tees.

NO DATE.—**Bradwell.**—ADDITIONS.—For extensive additions to Bradwell Isolation Hospital. Quantities, on deposit of £5 5s., to Messrs. A. R. Wood & Sons, architects, Tunstall.

NO DATE.—**Kingston-on-Thames.**—STORES.—For the erection of new stores at the Workhouse, Norbiton, Kingston-on-Thames, Surrey. Quantities and forms of tender from Mr. Chas. W. Dash, Clerk to the Guardians, Union Offices, Coombe-road, Kingston-on-Thames.

NO DATE.—**Newburn.**—COTTAGES.—For erection of cottages at Newburn for the Blaydon Co-operative Society. Mr. Wm. Brooks, jun., architect and surveyor, Church-street, Blaydon.

NO DATE.—**Northampton.**—ALTERATIONS.—For alterations of buildings in King-street, Northampton, to be used as a school clinic. Mr. W. D. Gibbins, Surveyor to the Committee, 5, St. Giles'-street, Northampton. Quantities on Deposit of £1 1s.

NO DATE.—**Nottingham.**—SCHOOLS, ETC.—For the erection of new United Methodist church and Sunday-schools at Lenton Sands. Quantities from Mr. A. E. Lambert, architect, 28, Park-row, Nottingham.

NO DATE.—**Pontefract.**—HOUSES.—For erection of six dwelling-houses in Halfpenny-lane, Pontefract. Messrs. Garside & Pennington, architects, surveyors, etc., Pontefract and Castleford.

NO DATE.—**Sandal.**—HOUSE.—For the erection of a detached house at Castle-terrace, Sandal. Messrs. Massie & Holdsworth, architects, Tetley House, Wakefield.

NO DATE.—**Selby.**—ALTERATIONS.—Proposed alterations to existing buildings, also for part new buildings, at Flaxley Lodge, Selby. Mr. James Hartley, architect, Skipton.

ENGINEERING, IRON, AND STEEL.

APRIL 5.—**Preston.**—EMBANKMENT.—For the excavation of about 23,000 cubic yds. of earth, and the formation of an embankment to carry a diversion of the Preston and Southport main road at Banks. Particulars and specification, etc., from Mr. W. H. Schofield, County Surveyor, County Offices, Preston.

APRIL 12.—**Inverness.**—BRIDGE, ETC.—For the taking down of the present bridge, and erection of a new steel superstructure, 101 ft. 6 in. clear span, over the River Spey at Laggan Bridge, about 8 miles from Newtonmore Station. Particulars from Mr. A. M. Grant, District Road Surveyor, County-buildings, Kingussie.

APRIL 16.—**Salcombe.**—ENGINES, ETC.—For supply of two engines, producer plants, and pumps, etc., for the waterworks at Salcombe. Particulars and forms of tender from the Surveyor, Mr. G. I. Helmes, 74, Fore-street, Salcombe. Deposit of £1 1s.

APRIL 21.—**Bulford.**—BRIDGE.—For the reconstruction of Bulford Bridge, Bulford, Salisbury Plain. Plans, specification, and form of tender from the County Surveyor, County Offices, Trowbridge.

FURNITURE, PAINTING, MATERIALS, etc.

APRIL 10.—**King's Lynn.**—PAINTING, ETC.—For painting and distempering the Harbour Office, Common Staithe, King's Lynn. Mr. W. D. Ward, Clerk to the King's Lynn Conservancy Board, King's Lynn.

APRIL 14.—**London.**—PAINTING.—For painting, etc., a portion of the interior and exterior of schools, High-road, Leytonstone. Forms of tender and specification, on deposit of £1 1s., from Mr. D. Thomas, Clerk to the Board, Bishop's-road, Victoria Park, N.E.

APRIL 15.—**London.**—PAINTING, ETC.—The London C.C. invite tenders for the cleaning, repainting, etc., of Hammersmith Bridge. Specifications, quantities, form of tender, etc., on application to the Chief Engineer of the Council, Mr. G. W. Humphreys, County Hall, Spring-gardens, S.W. Deposit of £1.

APRIL 17.—**London.**—PAINTING.—For painting works, etc., at the Tooting Home, Church-lane, Tooting. Form of specification and tender from Mr. F. W. Piper, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.

APRIL 17.—**Shrewsbury.**—PAINTING.—For painting the castle suspension bridge. Specification seen, and form of tender from Mr. W. C. Eddowes, Borough Surveyor, The Square, Shrewsbury. Deposit of £1.

APRIL 19.—**Colchester.**—PAINTING.—For external painting work at the Public Library, West Stockwell-street. Specifications and quantities from Mr. H. Goodyear, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall.

ROADS, SANITARY AND WATER WORKS.

✱ APRIL 5.—**Grimsby.**—ROAD AND DRAINAGE WORKS.—Tenders are invited for road formation and drainage works on the estate of Mr. G. F. Leigh. See advertisement in this issue for further particulars.

APRIL 7.—**Morecambe.**—PAVING, ETC.—For making-up, paving, etc., two back streets. Plans and specifications seen, and form of tender from Mr. J. W. Hipwood, A.M.Inst.C.E., Borough Surveyor, Town Hall, Morecambe.

APRIL 9.—**Birmingham.**—ROADS.—For reconstruction of Vicarage-road, Handsworth; a portion of Common-lane Washwood Heath; and a portion of Roberts-road, Yardley. Drawings and specifications seen, and quantities and forms of tender, on deposit of £2, from Mr. Henry E. Stilgoe, M.Inst.C.E., City Engineer and Surveyor, The Council House, Birmingham.

APRIL 9.—**Harwich.**—PAVING, ETC.—For works of making-up, metalling, channelling and paving, etc., St. George's-avenue, Elmhurst-road, and the western end of Lee-road. Plans, sections, and conditions of contract with Mr. F. Harold French, Borough Surveyor, 41, Church-street, Harwich, Essex. Deposit of £1 1s. for quantities.

APRIL 12.—**Southborough.**—STONE.—For supply of about 800 tons of basalt, granite, or other suitable stone. Forms of tender and particulars from Mr. P. Hanmer, Clerk, Council Offices, Southborough.

APRIL 12.—**Wrotham.**—STONE.—For the supply of stone. Forms of tender from Mr. F. T. Elliott, the Surveyor of the Council, at his office, Borough Green.

APRIL 14.—**Ayr.**—ROADS.—For permanent way construction, formation of road widenings, etc., and other relative works in connection with the extension of the tramways to Hawkhill. Plans seen, and specification, schedules, and forms of tender from Mr. John Young, M.Inst.C.E., Tramway Engineer, Town Buildings, Ayr. Deposit of £2.

✱ APRIL 14.—**Kensington.**—WOOD-PAVING.—The Kensington B.C. invite tenders for wood-paving works within the borough. See advertisement in this issue for further particulars.

APRIL 14.—**Plomesgate.**—GRANITE.—For about 3,000 tons of broken granite, and 1,250 tons of flint, broken or unbroken. Tenders to Mr. D. R. Reed, Clerk, Board-room, Wickham Market.

APRIL 15.—**Banff.**—ROAD.—For the reconstruction of four miles or thereby of the main road from Aberchirder towards Banff. Mr. James Grant, County and District Clerk, Banff.

✱ APRIL 16.—**Beckenham.**—RESURFACING ROADS.—The Beckenham U.D.C. invite tenders for resurfacing certain roads. See advertisement in this issue for further particulars.

APRIL 19.—**Bexhill.**—ROAD.—For making-up Woodville-road. Plans seen, and specification, quantities, and forms of tender from the Borough Surveyor, Mr. Geo. Ball, A.M.Inst.C.E., Town Hall. Deposit of £1 1s.

APRIL 22.—**Corby.**—SEWAGE.—For the construction of about 3,000 yds. of 7-in., 9-in., and 12-in. stoneware pipe sewers, together with manholes, flushing chambers, tanks, continuous filters, effluent drains, and other works, Corby. Drawings seen at the offices of the engineers, Messrs. Everard, Son, & Pick, 6, Millstone-lane, Leicester. Conditions, specification, quantities, and form of tender on deposit of £2 2s.

APRIL 23.—**Eastleigh.**—SEWAGE.—For the laying of storm-water sewers in High-street and Spring-lane, also for public improvements at the corner of Riverside and Church-road. Deposit of £1 to Mr. W. Wallace Gandy, Engineer and Surveyor to the Council, Offices of the Council, Eastleigh.

NO DATE.—**Merioneth.**—DRAINAGE.—For carrying out drainage work at the Slate Quarries Schools, Blaenau, Festiniog. Plans, specification, and particulars from Messrs. Deakin & Howard Jones, M.S.A., Plas Ynys, Borth, R.S.O.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CLERK OF WORKS	Itchen U.D.C.	£3 per week	April 10

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*DEALS, BATTENS, BOARDS, TIMBER, ETC.—Great Hall, Winchester House, E.C.	Churchill & Sim	April 16
*FREEHOLD WHARF AND FACTORY PREMISES—At the Mart	May & Rowden	April 17
*FREEHOLD PROPERTY—At the Mart	Debenham, Tewson, Richardson, & Co.	April 22

PATENTS.

APPLICATIONS PUBLISHED.*

5,377 of 1912.—Allan Inglis: Automatic sash-holder for windows of ships, railway carriages, and dwelling-houses.

5,400 of 1912.—Edward Frederick Stimson: Boilers for kitchen-ranges and the like.

6,027 of 1912.—John Arvid Kuivala: Concrete slab building construction.

6,114 of 1912.—Jules Doms: Twin bricks and the manufacture thereof.

6,448 of 1912.—Walter George Scott: Door chain.

6,588 of 1912.—Matthew Brown: Holdfast for window-sashes, sliding doors, and the like.

7,161 of 1912.—George Edward Clare: Cavity walls.

7,313 of 1912.—Alfred Henry Barton: Window blinds.

7,341 of 1912.—Henry Lewis Doulton and Charles Harcourt Giles: Overflows from sinks and the like.

8,674 of 1912.—Samuel Parks: Roofing tiles.

8,934 of 1912.—Thomas Jones: Portable sanitary closet.

11,161 of 1912.—Charles Sharp: Concrete sewer and manhole pipes or tubes.

11,500 of 1912.—Electromotor Equipment Company, Ltd., and Charles Frederick Archer: Means for opening and closing gates used in lifts and in connection therewith.

14,198 of 1912.—Fred Robinson and Robert Barrowclough: Bacteria beds for sewage treatment.

15,214 of 1912.—Joseph Carter: Latches for doors, gates, and the like.

16,191 of 1912.—Ralph Townsend Senter and Louis August Kling: Ventilators.

23,428 of 1912.—Oliver Imray (George Rueben Hill): Sewer-pipe sections.

25,254 of 1912.—Alphonsus Ligouri Drum: Railway-station constructions.

25,692 of 1912.—Edward Richards: Gutter-brackets.

27,527 of 1912.—Frank Loren Davis and Joseph Manley Wells: Facing tiles.

28,308 of 1912.—James Damrel Prior: Fire-resisting shutters and the like.

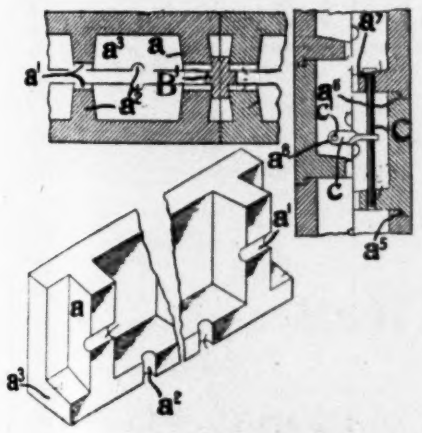
29,093 of 1912.—Arthur Lloyd Gibson (The Kinnear Manufacturing Company): Fire-resisting shutters and the like.

29,474 of 1912.—Petr Adamek: Manufacture of asbestos cement plates.

SELECTED PATENTS.

23,241 of 1911.—Arnold England: Blocks for walls.

This relates to walls which are constructed of concrete blocks of L shape in section, and provided with stiffening ribs *a* and ventilation holes a^1, a^2, the blocks being arranged with the horizontal limbs a^3 in contact or spaced

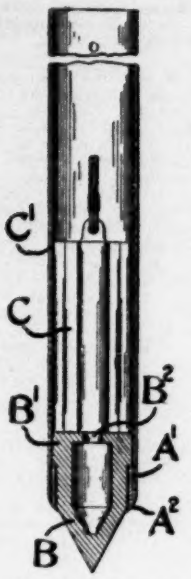


23,241 of 1911.

apart, and with the ribs opposite one another or staggered. The upper and lower ends of the blocks are formed with recesses a^5 and projections a^6 and the blocks are tied together by keys B^1 or by metal clips *c*, sliding on rods C, c^1, inserted in holes a^7, a^8, in the limbs a^3 and ribs, respectively.

23,342 of 1911.—Thomas Aubrey Watson: Piles.

This relates to hollow preparatory piles which are driven by means of a monkey suspended freely within and guided solely by the pile. The monkey C, which is provided with longitudinal ribs C^1, drops upon a detached point B, a collar B^1, of which engages with a collar A^1 on the pile. A tool is

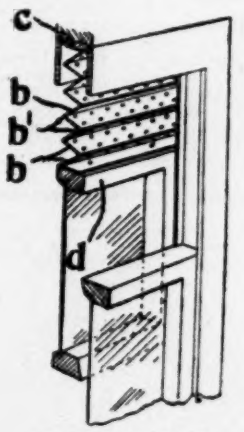


23,342 of 1911.

inserted in the opening B^2 of the shoe for the purpose of withdrawing it. Earth is excluded by the overturned edge A^2.

23,705 of 1911.—Charles Thomas Lee: Window ventilators.

This relates to a ventilator or screen for windows, which consists of folding perforated

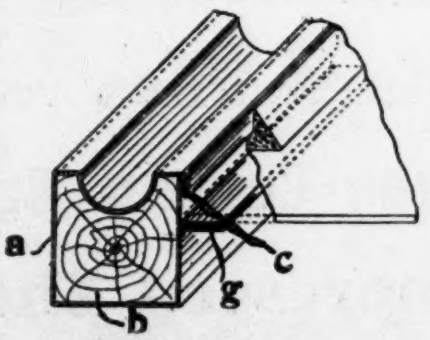


23,705 of 1911.

slats *b* of sheet metal or glass, hinged together at their edges b^1. The ventilator is fixed at one end to the head *c* of the window-frame and at the other end to the top of the window-sash *d*.

23,919 of 1911.—Adolf Müller-Deutschmann: Glazing.

This relates to glazed frames which are constructed of grooved wooden bars covered with a metal sheath having the ends over-



23,919 of 1911.

lapped to form flanges for supporting the glass frames. The bars *b* are formed by compressing wood or paper waste to the desired profile, and applying metal jackets *a* with flanges *g*, to support the glass, and with the ends *c* overlapped above the flanges.

*All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

PUBLISHER'S NOTICES.

Tel., 612 Gerrard. Telegrams, "The Builder, London."

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 6s. 0d.
Each additional line ..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps must not be sent; but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," 4, Catherine Street, W.C.

Advertisements for the current week's issue are received up to ONE p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the Office, 4, Catherine Street, Aldwych, W.C., free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN the COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed), 1s.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

March 13.—By HENRY HENDRIKS & Co.

Birmingham.—160, 162, 166, 168, 170, 172, 176, and 178, Corporation-st., 64 to 70, 74 to 80 (even), Dalton st., u.t. 45 yrs., g.r. £681, gross rental and e.r. £2,864 ..... £44,000

By HOOKER & WEBB.

Thornton Heath.—Mersham-rd., four houses, f., p. 660
West Croydon.—64, Greenside-rd., f., w.r. £31 4s. 285

March 14.—By DENNY & Co.

Bethnal Green.—44 and 46, Menotti-st., f., w.r. £68 12s. 430

By LOCKING, WALKER, & TEE.

Islington.—26, 22, 28A, 30, and 30A, Balls Pond-rd., f., w.r. £203 730
Hackney.—19 to 31 (odd), Tresham-av., u.t. 70 yrs., g.r. £45 16s., w.r. £299 1,390

By TAYLOR, LOVEGROVE, & Co.

South Kensington.—39, Courtfield-rd., u.t. 50 yrs., g.r. £40, p. 1,550

By HARRY BALL.

Bedford.—2 to 12 (even), Gadsby-st., f. 1,080
30 and 32, Little Butts-st., f. 310
114 and 116, Howbury-st., f. 545
2 to 8 (even), Clarendon-st., f. 1,275
136, 138, and 140, Bromham-rd., f. 1,560

By MADDISON, MILES, & MADDISON.

Great Yarmouth.—131 and 132, Northgate-st., f., p. 645
21, Victoria st., f., w.r. £11 14s. 140
100, King-st., f., p. 260

March 15.—By STEPHENSON & ALEXANDER.

Llanmaes, Glam.—Pickeston Farm, 100 a. 3 r. 7 p., f. 4,905

By ESCRITT & BARRELL.

Caythorpe, Lincs.—Freehold farm, 220 a. 3 r. 11 p. 1,575

March 17.—By WM. HOUGHTON.

Whitechapel.—43 to 47, Great Alie-st., u.t. 68 yrs., g.r. £100, p. 2,000

By SYDNEY A. NAYLOR & Co.

Silvertown.—165 to 171 (odd), North Woolwich-rd., u.t. 67 yrs., g.r. £20, w.r. £81 18s. 120

March 18.—By C. RAWLEY CROSS & Co.

Chiswick.—Chesterfield-rd., plot of land., f. 130

By PERCIVAL HODSON.

Barnsbury.—28, Thornhill-sq., u.t. 32½ yrs., g.r. £7, y.r. £48 250
Holloway.—57, Crayford-rd., u.t. 33½ yrs, g.r. £8, y.r. £42 275

By H. HOOKEY & Co.

Holloway.—57, Devonshire-rd., u.t. 39½ yrs., g.r. £5 5s., e.r. £36 270
Kingston-on-Thames.—3 to 17 (odd), Elm-cres., f.g. rents £32, reversion in 52 yrs. 500

By RUTLEY, SON, & VINE.

Holloway.—13, Citizen-rd., u.t. 30 yrs., g.r. £6, w.r. £40 6s. 135
Finsbury Park.—4 and 5, Hatley-rd., u.t. 53 yrs., g.r. £10 10s., w.r. £70 4s. 300
Holloway.—40, Almington-st., u.t. 58 yrs., g.r. £6, w.r. £42 18s. 160
Harringay.—66, Cavendish-rd., u.t. 79 yrs., g.r. £7, y.r. £36 245

By FREDERICK WARMAN.

Finsbury Park.—23, St. Thomas'-rd., u.t. 50 yrs., g.r. £7, e.r. £40 180

By SHAFTO H. SIKES.

Lesthorpe, Leics.—Two farms, 534 acres, f.... £12,16

By O. E. GRIFFITHS.

Cowlinge, Suffolk.—Ballards Place Farm, 15 a. 3 r. 35 p. 500

By R. CHEKE & Co.

Forest Gate.—130 and 138, Osborne-rd., u.t. 63 yrs., g.r. £11 15s., y.r. £65 635

98, Osborne-rd., u.t. 63 yrs., g.r. £7 7s., e.r. £36 345

132, Hampton-rd., u.t. 69 yrs., g.r. £7 6s., e.r. £40 295

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of his information.

BRICKS, &c.

Per 1000 Alongside, in River.

	£ s. d.
Best Stocks	1 16 0
Picked Stocks for Facings	2 10 0

Per 1000, Delivered at Railway Depôt.

	£ s. d.		£ s. d.
Flettons	1 14 0	Best Blue Pressed Staffordshire	3 15 0
Best Fareham Red	3 12 0	Do. Bullnose	4 0 0
Best Red Pressed Ruabon Facing	5 0 0	Best Stourbridge Fire Bricks	4 0 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glzd. Str'tch'rs	12 7 6	Double Headers	14 17 6
		One Side and two Ends	13 17 6
Headers	11 17 6	Two Sides and one End	19 17 6
Quoins, Bullnose, and 4½ in. Flats	15 17 6	Splays & Squints	17 7 6
D'ble Stretchers	17 17 6		

Second Quality £1 10s. per 1000 less than best.

	s. d.	
Thames and Pit Sand	6 9	per yard, delivered.
Thames Ballast	5 6	" "
Best Portland Cement	36 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 13s. 6d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly dpt.

STONE.

Per Ft. Cube.

	s. d.
BATH STONE—delivered on road waggons, Paddington Depôt	1 7½
Do. do. delivered on road waggons, Nine Elms Depôt	1 9½
PORTLAND STONE (20 ft. average)— Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 4½
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 6½

Per Ft. Cube, delivered at Railway Depôt.

	s. d.		s. d.
Ancaster in blocks	1 10	Closeburn Red Freestone	2 0
Beer in blocks	1 6	Red Mansfield Freestone	2 4
Greenshill in blocks	1 10	Talacre & Gwespyr Stone	2 4
Darley Dale in blocks	2 4		
Red Corsehill in blocks	2 3		

STONE (*Continued*).

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.

	s. d.
Scappled random blocks	2 10

Per Ft. Super., Delivered at Railway Depôt.

	s. d.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3
6 in. rubbed two sides ditto, ditto	2 6
3 in. sawn two sides slabs (random sizes)	0 11½
2½ in. to 2¾ in. sawn one side slabs (random sizes)	0 7
1½ in. to 2 in. ditto, ditto	0 6

HARD YORK—

Per Ft. Cube, Delivered at Railway Depôt.

	s. d.
Scappled random blocks	3 0

Per Ft. Super., Delivered at Railway Depôt.

	s. d.
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 3
6 in. rubbed two sides ditto	3 0
3 in. sawn two sides slabs (random sizes)	1 3
2 in. self-faced random flags	0 5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£ s. d.	In. In.	£ s. d.
20×10 best blue Bangor	13 2 6	20×10 best Eur'ka unfading green	15 17 6
20×12 ditto	13 17 6	20×12 ditto	18 7 6
20×10 1st quality ditto	13 0 0	18×10 ditto	13 5 0
20×12 ditto	13 15 0	16×8 ditto	10 5 0
16×8 ditto	7 5 0	20×10 permanent green	11 12 6
22×10 best blue Portmadoc	12 12 6	18×10 ditto	9 12 6
16×8 ditto	6 12 6	16×8 ditto	6 13 6

TILES.

At Railway Depôt.

	s. d.		s. d.
Best plain red roofing (per 1000)	42 0	Best "Hartshill" brand, plain sand-faced (per 1000)	45 0
Hip and Valley (per doz.)	3 7	Do. pressed (per 1000)	42 6
Best Broseley (per 1000)	50 0	Do. Ornamental (per 1000)	47 6
Do. Ornamental (per 1000)	52 6	Hip (per doz.)	4 0
Hip and Valley (per doz.)	4 0	Valley (per doz.)	3 6
Best Ruabon red, brown, or brindled (Edw'ds) (per 1000)	57 6	Staffords. (Hanley Reds or Brindled (per 1000)	42 6
Do. Ornamental (per 1000)	60 0	Hand-made sand-faced (per 1000)	45 0
Hip (per doz.)	4 0	Hip (per doz.)	4 0
Valley (per doz.)	3 0	Valley (per doz.)	3 6

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	15 0 0	16 10 0
Deals: best 3 in. by 9 in.	15 0 0	16 0 0

BUILDING EXHIBITION 1913. OLYMPIA, LONDON. April 12 to 26

"BELL'S" TILES

TRADE MARK Poilite

"POILITE" SHEETS

STAND NUMBER 168

Arrangements can be made for Architects, Engineers, and those interested in the Building Trade to inspect our Poilite Factory at Harefield.

Roman Roofing Tiles
(About 4′ 0″ × 1′ 10″, for fixing Straight Cover).

Poilite Standard Tiles FOR DIAGONAL FIXING.

Poilite Asbestos Cement Building Sheets
(4′ × 4′, 6′ × 4′, 8′ × 4′. From $\frac{5}{32}$″ thick, upwards).

Compressed Sheets
(4′ × 4′, Smooth on Both Sides).

BELL'S UNITED ASBESTOS CO., LTD., 59½, SOUTHWARK STREET, LONDON, S.E.

WOOD (Continued).

BUILDING WOOD (Continued)—	At per standard. £ s. d.	£ s. d.
Battens: best 2½ in. by 7 in. and 8in., and 3 in. by 7 in. and 8 in.	12 10 0	13 10 0
Battens: best 2½ by 6 and 3 by 6...	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	" "
2 in. by 4 in. and 2 in. by 6 in....	11 10 0	12 10 0
2 in. by 4½ in. and 2 in. by 5 in.	10 10 0	11 10 0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
	At per load of 50 ft.	
Fir timber: best middling Danzig or Memel (average specification)	5 0 0	6 5 0
Seconds	4 10 0	5 0 0
Small timber (8 in. to 10 in.)	3 17 6	4 0 0
Small timber (6 in. to 8 in.)	3 5 0	3 10 0
Swedish balks	2 12 6	3 0 0
Pitch-pine timber (30 ft. average)	6 0 0	7 0 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in.	26 0 0	27 0 0
3 in. by 9 in.	24 0 0	25 0 0
Battens, 2½ in. and 3 in. by 7 in.	18 10 0	19 10 0
Second yellow deals, 3in. by 11in.	21 10 0	22 10 0
" " 3 in. by 9 in.	20 0 0	21 0 0
Battens, 2½ in. and 3 in. by 7 in.	15 0 0	16 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	16 0 0	17 0 0
Battens, 2½ in. and 3 in. by 7 in.	14 0 0	15 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	23 0 0	24 0 0
Do. 3 in. by 9 in.	20 0 0	21 0 0
Battens	15 0 0	16 0 0
Second yellow deals, 3 in. by 11 in.	17 10 0	18 10 0
Do. 3 in. by 9 in.	16 0 0	17 0 0
Battens	12 10 0	13 10 0
Third yellow deals, 3 in. by 11 in.	14 0 0	15 0 0
Do. 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 10 0	12 10 0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	16 10 0	17 10 0
" " 3 in. by 9 in.	14 10 0	15 10 0
Battens	13 0 0	13 10 0
Second white deals, 3in. by 11in.	14 10 0	15 10 0
" " 3 in. by 9 in.	13 0 0	14 0 0
Battens	12 0 0	12 10 0
Pitch-pine: deals	25 0 0	26 10 0
Under 2 in. thick extra	0 10 0	1 0 0
Columbian or Oregon Pine, best quality	23 0 0	24 0 0
Yellow Pine—First, regular sizes	50 0 0	upwards.
Oddments	35 0 0	"
Seconds, regular sizes	36 0 0	"
Oddments	31 0 0	"
Kauri Pine—Planks per ft. cube.	0 5 6	0 6 6
Danzig and Stettin Oak Logs— Large, per ft. cube	0 3 0	0 3 9
Small " "	0 2 6	0 3 0
Wainscot Oak Logs, per ft. cube	0 7 6	0 9 0
Dry Wainscot Oak, per ft. super. as inch	0 0 10	0 1 2
¼ in. do. do.	0 0 9	0 1 0
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch..	0 0 10	0 1 3
Selected, Figury, per ft. super. as inch	0 1 6	0 2 6
Cuba Mahogany	0 1 4	0 2 6 upwards.
Dry Walnut, American, per ft. super. as inch	0 0 10	0 1 2
French, "Italian," Walnut	0 0 10	0 1 4
Teak, per load (Rangoon or Moulmein)	20 10 0	26 0 0
Do., do. (Java)	19 0 0	22 10 0
American Whitewood planks, per ft. cube	0 5 6	0 6 6
Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 14 6	0 18 0
in. by 7 in. yellow, planed and matched	0 14 9	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 17 6	1 3 0
1 in. by 7 in. white, planed and shot	0 14 0	0 16 0
1 in. by 7 in. white, planed and matched	0 14 3	0 16 6
1¼ in. by 7 in. white, planed and matched	0 16 6	0 8 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 12 6	0 15 0
1 in. by 7 in. " "	0 15 0	0 18 6
¾ in. by 7 in. white " "	0 12 0	0 14 0
1 in. by 7 in. " "	0 14 3	0 16 6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	9 0 0	10 0 0
Compound Girders, ordinary sections	11 0 0	12 0 0
Steel Compound Stanchions	12 0 0	13 0 0
Angles, Tees, and Channels, ordinary sections	11 0 0	12 0 0
Flitch Plates	11 0 0	12 0 0
Cast Iron Columns & Stanchions, including ordinary patterns	8 10 0	9 0 0

METALS.

IRON—	Per ton, in London. £ s. d.	£ s. d.
Common Bars	9 0 0	9 10 0
Staffordshire Crown Bars, good merchant quality	9 5 0	9 15 0
Staffordshire "Marked Bars"	11 0 0	—
Mild Steel Bars	9 5 0	9 15 0
Hoop Iron, basis price	10 0 0	—
" " Galvanised	17 10 0	—
("And upwards, according to size and gauge.)		
Sheet Iron Black— Ordinary sizes to 20 g.	10 5 0	—
" " 24 g.	11 5 0	—
" " 26 g.	12 15 0	—

METALS (Continued).

IRON (Continued)—	Per ton, in London. £ s. d.	£ s. d.
Sheet Iron, Galvanised, flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 10 0	—
Ordinary sizes to 22 g. and 24 g.	16 0 0	—
" " 26 g.	17 0 0	—
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	18 10 0	—
" " 22 g. and 24 g.	19 0 0	—
" " 26 g.	20 10 0	—
Galvanised Corrugated Sheets— Ordinary sizes, 6ft. to 8ft. 20 g.	15 0 0	—
" " 22 g. and 24 g.	15 5 0	—
" " 26 g.	16 15 0	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 10 0	—
Best Soft Steel Sheets, 2 g. & 24 g.	13 10 0	—
" " " 26 g.	15 10 0	—
Cut Nails, 3 in. to 6 in. (Under 3 in., usual trade extras.)	11 0 0	11 10 0

LEAD, &c.

Delivered in London.

	£ s. d.	
LEAD—Sheet, English, 4lb. and up	20 5 0	—
Pipe in coils	20 15 0	—
Soil pipe	23 15 0	—
Compo pipe	23 15 0	—
ZINC—Sheet—	In casks of 10 cwt.	
Vielle Montagne	33 15 0	—
Silesian	33 10 0	—
Zinc, in bundles, 1s. per cwt. extra.		
COPPER— Strong Sheet per lb.	0 1 1	—
Thin " "	0 1 2	—
Copper nails "	0 1 0	—
Copper wire "	0 1 0	—
BRASS— Strong Sheet "	0 1 0	—
Thin "	0 1 1	—
TIN—English Ingots "	0 2 2	—
SOLDER—Plumbers' "	0 0 10½	—
Tinmen's "	0 1 2	—
Blowpipe "	0 1 4	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

15 oz. thirds	2½d.	26 oz. fourths	4d.
" fourths	2d.	32 oz. thirds	5½d.
21 oz. thirds	3½d.	" fourths	4½d.
" fourths	3½d.	Fluted Sheet, 15 oz.	3d.
25 oz. thirds	4½d.	" 21 oz.	4d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

¼ Rolled plate	2½d.
⅜ Rough rolled and rough cast plate..	2¾d.
½ Rough rolled and rough cast plate..	3d.
Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	3½d.
Ditto, tinted	5d.

* Not less than two crates.

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 3
" " " in barrels	"	0 2 4
" " " in drums	"	0 2 6
Boiled " " in barrels	"	0 2 6
" " " in drums	"	0 2 9
Turpentine in barrels	"	0 2 8
" in drums	"	0 2 10
Genuine Ground English White Lead, (In not less than 5 cwt. lots)	per ton	28 5 0
Red Lead, Dry	"	26 10 0
Best Linseed Oil Putty	per cwt.	0 10 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 9
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 6
Extra Pale French Oil	1 1 0
Eggshell Plating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 6
French and Brush Polish	0 10 0

. An error was made in the price of lead (sheet, English) last week. It should have been £20 5s.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 18s. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 6 p.m. *on Wednesday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

ABERAVON.—For erection of new arcade and municipal offices, etc. Mr. James Roderick, Borough Surveyor, Aberavon. Quantities by Borough Surveyor:—

Contract No. 1.—Building.

J. Allen, Ltd	£8,194 16 0	D. Davies & Son	£7,561 11 4
J. Davies	8,351 2 9	M. Cox, Aberavon*	7,495 0 0
W. Thomas & Co.	7,778 14 0		

Contract No. 2.—Ferro-concrete Columns, Floors, etc., Hennebique System.

Lombrick & Co.	£2,855 16 9	G. L. Morgan	£2,253 11 0
Playfair & Toole	2,848 0 0	Hobrough & Co.	2,206 8 4
Allen, Ltd.	2,575 9 3	W. Thomas & Co., Cardiff*	2,079 1 4
F. Bevis, Ltd.	2,537 12 3		
Perry & Co.	2,319 0 0		

Contract No. 3.—Eighteen Lock-up Shops.

S. Hoskins	£3,099 1 6	D. Davies	£2,915 4 6
Harris & Sheldon	2,506 0 0	J. Allen	2,007 15 3
Bartlett	2,369 4 0	J. Davies	1,993 0 6
W. Thomas	2,314 16 2	Cardiff Steam Joinery Co.	1,800 0 0
Pranall	2,276 16 0		

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ABINGDON.—For reconstruction of premises in Ock-street as a motor garage, for the Master and Governors of Christ's Hospital, Abingdon. Mr. G. T. West, architect, The Knowle, Abingdon. Quantities by the architect:—

Harris & White	£1,291 2 4	Cox & Sons	£1,096 5 0
Buckle & Sons	1,15 0 0	G. H. Wheeler	1,025 0 0
Burgess & Sons	1,093 7 4	Thatcher & Sons, Abingdon*	999 9 0
P. Barrett	1,050 0 0		
Kingerlee & Sons	1,048 0 0		

BLAENAVON.—For erection of a church and school-room, for the Vicar and Wardens of the Parish of Blaenavon. Mr. J. Daniel, architect, 25, Lower Waun-street, Blaenavon. Quantities by architect:—

H. Smith	£2,100	I. Edmonds, Blaenavon*	£1,670
H. Evans	1,795	E. Sainsbury	1,597

BUNGAY.—For building the Rose and Crown Inn, Bungay, Suffolk, for Messrs. Youngs, Crawshay, & Youngs, Ltd., brewers, Norwich. Mr. S. Tungate, surveyor, Orford-hill, Norwich. Quantities by surveyor:—

		Time. Weeks.
J. S. Smith & Son	£905 0 0	14
J. Youngs & Son	895 0 0	14
H. A. King	872 11 8	—
J. Hurn & Son, Norwich‡	848 10 0	12
T. Gill & Son	827 0 0	20

‡ Accepted on time.

DONCASTER.—For erection of the new technical school, for Doncaster Corporation:—
P. Rhodes, Leeds* £13,071

DONCASTER.—For a new retort bench, for the Gas Works Committee of the Corporation:—
Drakes, Ltd.* £3,095

DONCASTER.—For new retort house, stores, and extension of the gas works, for the Gas Works Committee of the Doncaster Corporation:—
S. Beastall* £4,100

HARWICH.—For the erection of the Hill Schools, Dovercourt, for the Harwich Town Council:—
S. A. Kenney, Ipswich* £7,375

LLANYRNEWYDD.—For enlarging the church mission-room, etc., for Mr. G. Baker Haynes, Brynhir, Penclawdd. Mr. D. Thomas, architect, Penlan, Penclawdd:—
Thomas, Lewis, & Thomas £720
Thomas & Thomas, Penclawdd* 715

MANCHESTER.—For new Sunday-school building at Hazel Grove. Mr. C. T. Adshead, A.R.I.B.A., 4, St. Ann's-square, Manchester. Quantities by Messrs. Nobbs & Hobson, building surveyors, Manchester:—
S. Robinson & Sons, Hyde Sawmills, Hyde ... £5,495

PORTSEA.—For boundary railings, etc., at the Portsea Workhouse Grounds. Mr. A. E. Cogswell, architect and surveyor, Portsmouth:—

Furneaux Riddell & Co.	£1,567	F. Corke	£1,341
Croad	1,444	McKinlay & Co.	1,232
Crockerell	1,396	F. J. Pivett, Southsea*	1,167
W. W. Evans	1,323	J. Elwell, Ltd.	1,156

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SWANSEA.—For additions to the Central police station. Mr. E. Morgan, A.R.I.B.A., architect, Wind-street, Swansea:—

	Portland Stone.	Bath Stone.
A. Colbourne	£27,372	£24,882 0 0
Bennett Bros.	25,920	23,885 13 2
Wilkins & Sons	25,288	23,888 0 0
H. Billings	25,000	23,550 0 0
G. Davies	24,200	22,780 0 0
D. Jenkins, Ltd.	24,100	20,900 0 0
Lloyd Bros.	23,676	21,776 0 0
Bond	23,300	22,138 0 0
J. & F. Weaver, Manselton, Swansea*	23,000	21,400 0 0

SWANSEA.—For alterations and additions to premises in Delabeche-street, for Alexandra Laundry, Ltd. Mr. C. T. Ruthen, architect, Heathfield-street, Swansea:—

Dawson & Jones, Ltd.	£624 4 1	J. & F. Weaver	£550 0 0
J. & D. Jones	577 0 0	J. Marles & Sons, Richardson-street-yard, Swansea*	495 0 0
T. Richards	560 0 0		
D. Jenkins, Ltd.	560 0 0		

SWANSEA.—For erection of the Pictorium. Mr. C. T. Ruthen, architect, Bank-chambers, Swansea:—

T. Richards	£4,400 0	White Bros.	£3,412 19
J. & F. Weaver	3,800 0	H. Billings & Sons, Oyster-mouth-yard, Swansea*	3,195 0
A. J. Colborne	3,789 10		
J. Marles & Sons	3,675 0		
D. Jenkins, Ltd.	3,600 0		

UGBOROUGH (Devon).—For construction of a 20,000-gallon ferro-concrete storage reservoir under the Khan system and laying water mains, for the Rural District Council of Totnes. Mr. Parmenas Pearce, Water Engineer, South Brent. Quantities by Water Engineer:—

	For Reservoir.	For Water Mains.
Best Bros.	£287 8 0	£484 10 0
W. E. Bennett	299 0 0	490 15 0
A. Cranch	370 0 0	470 0 0
C. L. Duke	272 0 0	454 3 4
H. Drew	293 0 0	383 0 0
E. Endicott	333 18 0	494 13 0
Holmes & Son	277 11 0	410 3 4
F. Kennard	—	384 19 0
Lester & Co.	330 0 0	580 6 0
R. Narracott	263 7 6	432 19 6
Pollard & Co.	311 15 0	433 16 9
W. S. Shaddock	—	576 12 9
T. Shaddock	308 3 0	426 6 0
G. Trout	—	386 3 2
Neale & Sons, Brent*	256 7 10	399 0 0

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WROXHAM.—For business premises and residence at Wroxham, Norfolk. Messrs. Morgan & Buckingham, architects and surveyors, 1, Upper King-street, Norwich:—

T. H. Blyth	£1,775	W. J. Hannant	£1,580
W. C. Porter	1,6 7	J. Anderson & Son	1,570
J. Youngs & Son	1,657	A. Tyrrell	1,494
R. Riches & Son	1,620	T. Gill & Son	1,487
W. Trorey	1,609	H. C. Greengrass	1,446
H. C. Southgate	1,595		

*** In our lists of tenders for March 21, in connection with the new Rotherhithe Town Hall, the amount of Mr. Henry Kent's tender was given as £772. We understand from Mr. Kent that this should have been £722.

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